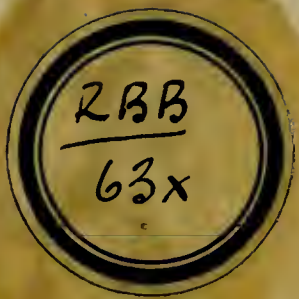


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SOUTH AUSTRALIA

ANNUAL REPORT

OF THE

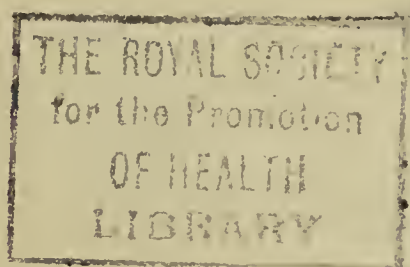
Department of Public Health

AND THE

Central Board of Health

FOR THE

Year ended 31st December, 1961



BY AUTHORITY: W. L. HAWES, Government Printer, Adelaide

1962

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THE PUBLIC HEALTH

Annual Report of the Department of Public Health and the Central Board of Health to the Minister of Health (Hon. Sir Alexander Lyell McEwin, K.B.E., M.L.C.)

SIR—We have the honour to submit the report for the Department of Public Health and the Central Board of Health for the year ended 31st December, 1961. The report is divided into the following sections :—

1. Staff and administration.
2. Public Health Branch.
3. School Health Branch.
4. Poliomyelitis Branch.
5. Tuberculosis Branch.
6. Summary and comments.

Sections 2, 3, 4 and 5 deal with branches of the Department and have been prepared by the officers in charge, namely the Principal Medical Officer (Public Health), the Principal Medical Officer for Schools, the Principal Medical Officer (Poliomyelitis) and the Director of Tuberculosis.

1. STAFF AND ADMINISTRATION

Personnel of the Board.—During the year the members of the Board were :—

Chairman—Philip Scott Woodruff, M.D., B.S., D.T.M. & H., M.R.A.C.P.

Members appointed by the Governor—

John Burton Cleland, C.B.E., M.D.Ch.M., F.R.A.C.P.

George Hugh McQueen, M.B., B.S., D.P.H., D.T.M., F.R.S.H., F.R.S.T.M. & H.

Member elected by the metropolitan local boards—

Charles John Henry Williamson, J.P.

Member elected by other local boards—

Alfred Bertram Cox, J.P., F.A.S.A., F.C.I.S.

Secretary—Murray Edwin Stephens Bray.

On 16th March, 1961, Mr. C. J. H. Williamson was appointed to the Board as representative of the metropolitan Local Boards of Health to fill the vacancy caused by the death of Mr. A. R. Burnell in 1960.

Staff of the Department.—As at 31st December, 1961, the principal staff consisted of the Director-General of Public Health (Dr. P. S. Woodruff), the Principal Medical Officer (Public Health) (Dr. G. H. McQueen), the Principal Medical Officer for Schools (Dr. C. O. Fuller), the Principal Medical Officer (Poliomyelitis) (Dr. R. R. Horton), the Director of Tuberculosis (Dr. T. G. Paxon) and the Secretary (Mr. M. E. S. Bray). Throughout the year there was an average of 210 officers and employees.

“*Good Health.*”—During the year four booklets were printed and distributed to local boards, medical officers and other interested parties. Some of the subjects in these issues were :—

1. German measles and pregnancy, influenza, home safety for children and public health policy on radiological health.
2. Crippled children, cancer, the diabetic child at school, accidents need not happen and smoking habits.
3. Decentralized public health, child minding centres and Salmonella infection in animals and animal products.
4. Directory of Social Agencies—2nd edition.

The National Health and Medical Research Council and Committees.—The Department was represented at the Council and Committee meetings during the year. Dr. P. S. Woodruff attended council meetings at the 51st and 52nd sessions held in Melbourne and Canberra in May and October, 1961.

Two Occupational Health Committee meetings were held during the year and Dr. G. H. McQueen, Principal Medical Officer (Public Health), attended on both occasions. Mr. R. C. McCarthy, Pharmaceutical Inspector attended the meetings of the two subcommittees dealing with Food Standards and Poison Schedules.

Maternal Mortality Committee.—Early in the year a special medical committee to investigate maternal mortality was set up.

The objects of the Committee are to investigate the causes of death associated with pregnancy and childbirth ; to determine whether these may have been preventable ; to establish what were the avoidable factors if any, and to advise the Minister of Health on these matters.

The Committee is widely representative of interested medical groups, and is made up as follows :—

Department of Public Health	Philip Scott Woodruff, M.D., B.S., D.T.M. & H., M.R.A.C.P., Chairman.
Australian Medical Association	Kenneth Francis Cooper, M.B., B.S., Member. William John Sleeman, M.B., B.S., Member.
Royal College of Obstetricians and Gynaecologists	Sir Reginald Francis Matters, M.D., M.S., F.R.C.S., F.R.A.C.S., F.R.C.O.G., Member.
University of Adelaide	Professor Lloyd Woodrow Cox, M.B., B.Ch., F.R.C.S., F.R.A.C.S., M.R.C.O.G., Member. Professor James Struan Robertson, M.B., B.S., D.Phil., Member.
Queen Victoria Maternity Hospital	Freida Ruth Heighway, M.D., B.S., M.R.C.O.G., F.R.C.O.G., Member.
Queen Elizabeth Hospital	Frank Edison Welch, M.B., B.S., L.M., D.G.O., D.(Obst.)R.C.O.G., Member.
College of General Practitioners	Harold Richard Hugh Noel Oaten, M.B., B.S., D.(Obst.)R.C.O.G., Member.

It is hoped that it will provide evidence of any directions in which obstetric teaching in past years has been incomplete or ineffective. It will have particular value in suggesting subjects for discussion at postgraduate courses and lectures.

The Committee met twice in the latter part of 1961, and by discussion of the small number of cases before it established a mode of operation which allows the gathering of full information and the expressions of expert opinion.

Two points of importance are, first, that city and country general practitioners are represented as well as specialists, teachers, and the Public Health Department ; and secondly that the Committee meets as a medical body entirely with no lay person present. This assures the greatest freedom of discussion of technical matters.

2. PUBLIC HEALTH BRANCH

The report of this Branch is divided as follows :—

- (a) Staff.
- (b) Vital Statistics.
- (c) Legislation.
- (d) Control of Infectious Diseases.
- (e) Control of Venereal Diseases.
- (f) Supervision of Environmental Sanitation.
- (g) Supervision of Septic Tank Sewage Disposal Systems.
- (h) Supervision of Food and Drugs Sold in South Australia.
- (i) Supervision of Industrial Health.
- (j) Health Education.

(a) STAFF

The professional and subprofessional staff of the Public Health Supervision Branch of the Department of Public Health at the end of 1961, consisted of :—

- One Principal Medical Officer.
- Two District Medical Officers.
- Two Part-time District Medical Officers.
- One Industrial Medical Officer.
- One Medical Officer for Gaols and Prisons.
- One Chief Inspector.
- Twelve Inspectors.
- One Nurse Inspector.
- Fifteen Part-time Inspectors.
- Two Pharmaceutical Inspectors.
- One Biophysicist.

During May, 1961, Dr. C. M. Deland was transferred from the position of District Medical Officer to that of Industrial Medical Officer and Dr. C. O. Fuller was promoted from the position of District Medical Officer to that of Principal Medical Officer for Schools.

These transfers left two positions for District Medical Officer vacant. Applications to fill positions for District Medical Officers have been called for at intervals during the past three years but no applications from suitable persons with the desired qualifications and training in public health work have been received.

Drs. L. G. F. Gillam and B. H. Jeanes were suitable applicants, except for lack of postgraduate training in public health.

Dr. Gillam was appointed in January, 1961, to fill the position made vacant when Dr. Zeville resigned in 1959, and Dr. Jeanes was appointed in May, 1961, to the vacancy caused by the transfer of Dr. Deland. The third vacancy has not yet been filled.

Dr. Gillam has since left the Department on extended leave without pay. Dr. Deland has found it necessary to take sick leave.

The lack of medical staff for the Branch has never been more acute than at present.

Dr. P. W. Allen commenced duty in March, 1961, as medical officer to the Gaols and Prisons Department. Though this position is in the Department of Public Health the Officer who fills it spends all of his time doing health and medical work at gaols and prisons. Dr. Allen has now resigned from this position.

During the year, two new positions were approved for inspectors under the Health Act and Food and Drugs Act. One was for a senior resident inspector at Whyalla and this was filled by the transfer of Mr. M. W. Yard from the headquarters of the Branch in Adelaide. His position in Adelaide was filled by the appointment of Mr. F. J. Watson from outside the Service.

Mr. Yard will be responsible for the supervision of sanitation in areas outside of local government control on Eyre Peninsula, and for work for which the Department of Public Health is responsible within local governing areas. He will also be available to advise and assist local boards and their officers in the administration of public health legislation in the area.

The establishment of a district inspector is new to South Australia. The need for a Department of Public Health resident district inspector in the Whyalla area has been realized for some time, as many places of public health importance are situated in out-districts. Some of the more important include the Whyalla Abattoirs, the Whyalla Dairy and the whole of the Broken Hill Proprietary Works. The City of Whyalla is a compulsory septic tank area, and as the installation of septic tanks is a direct responsibility of the Central Board of Health, the need for close supervision in the area is increasing as the city grows.

It is anticipated the townships of Iron Knob and Iron Baron will expand in the near future and the need for planning to ensure the proper disposal of wastes and to maintain high standards of hygiene will become increasingly important.

The other position was for a health inspector at the Branch Headquarters in Adelaide. Mr. A. J. Selway, of the Public Buildings Department was appointed to this position.

(b) VITAL STATISTICS

The following particulars for 1961 have been obtained from the Deputy Commonwealth Statistician. Some figures are subject to slight revision. Details for 1960 are shown in parentheses.

Population.—The estimated mean population for the State in 1961 was 969,258 (944,785)

Births.—The number of births registered during 1961, totalled 22,399 (20,966).

As a period of 42 days after birth is permitted for registration the number of births registered in a year usually differs from the number of births actually occurring during that year. In 1961, the number of births which occurred is estimated to be 21,300 (21,079).

Sexes of Births.—The masculinity ratio, *i.e.*, the ratio of male births to female births, does not as a rule vary greatly from year to year. The 1960 figure of 105·43, however, was rather higher than the 1959 figure of 102·77 which was unusually low, being the lowest recorded since 1936, when the ratio was 102·43. The figure for 1961 was 103·68 (105·43).

Still Births.—These numbered 272 (280). They are not included in births or deaths figures.

Deaths Registered.—A total of 7,815 (7,804) deaths were registered during 1961. The death rate in 1961, continued the downward trend which began in 1956 and reached a new record low of 8·06, the previous lowest rate being 8·126 in 1961.

Infantile Mortality.—Infant deaths registered during 1961, totalled 448 (397). The resultant infant mortality rate of 20·00 (18·94) was higher than last year. The rate for 1960, was the lowest recorded rate; the previous lowest was 19·88 in 1956.

There were 292 (278) deaths of children under one month, and 156 (119) deaths of children from one month to one year. The main causes are shown in the following Table No. 1.

TABLE 1.—INFANT DEATHS: MAIN CAUSES SOUTH AUSTRALIA, 1957-61

Cause	1957	1958	1959	1960	1961
	No.	No.	No.	No.	No.
Diarrhoea	15	35	7	8	12
Congenital Malformations	92	85	72	95	102
Prematurity	76	74	69	82	72
Injury at birth	51	50	42	39	46
Post-natal Asphyxia and Atelectasis	51	42	58	28	38
Other diseases peculiar to early infancy	31	41	49	43	65
Cerebro-spinal Meningitis	1	—	1	1	3
Meningitis	8	5	6	5	1
Whooping Cough	—	1	—	1	—
Pneumonia	38	48	44	23	38
Hernia and Intestinal obstruction	4	3	2	6	8
External causes	9	18	19	12	24
All other causes	27	47	53	54	39
Total	403	449	422	397	448

Marriages.—The number of marriages registered during 1961 was 6,804 (6,607). The rate per 1,000 of the mean population was 7·02 (6·99).

The mean age of marriage for bachelors was 26·7 (25·9) years and for spinsters 23·7 (22·5).

Summary.—The following Table No. 2, shows the numbers and rates per 1,000 of the mean population of registered births, deaths and marriages and the infantile death rates per 1,000 live births for the years 1957 to 1961.

TABLE 2.—BIRTHS, MARRIAGES AND DEATHS: NUMBERS REGISTERED AND RATES

Period	Births Registered		Marriages		Deaths Registered			
					Total		Infants	
Year—	No.	Rate (a)	No.	Rate (a)	No.	Rate (a)	No.	Rate (b)
1957.....	19,536	22·35	6,581	7·53	7,576	8·67	403	20·63
1958.....	20,047	22·35	6,505	7·25	7,743	8·63	449	22·39
1959.....	20,372	22·12	6,614	7·18	7,943	8·62	422	20·71
1960.....	20,966	22·19	6,607	6·99	7,804	8·26	397	18·94
1961.....	22,399	23·11	6,804	7·02	7,815	8·06	448	20·00

(a) Per 1,000 of Mean Population. (b) Per 1,000 Live Births.

(c) LEGISLATION

Health Act and Health Act Regulations.

Rest Homes.—Section 146 (a) dealing with rest homes was amended. A “rest home” now means a building or part of a building used as a rest home or used for the purposes of a rest home at any time or during any period if at that time or during that period a person exercised over another person (not being a relation of the first mentioned person) boarding or lodging in that building or that part of that building any oversight, care or control by way of nursing treatment or treatment applicable to aged, infirm or helpless or partially helpless persons, unless it is proved that no fee or reward was paid or given or agreed to be paid or given for such oversight care or control and that no fee or reward for such oversight care or control had been included in any payment made or agreed to be made for the board or lodging of that other person in that building or part of that time or during that period.

Consolidated Regulations.—Regulations made under the Health Act were consolidated and published in the *Government Gazette* of 29th June, 1961. They are now known as “Health Regulations, 1961.”

Food and Drugs Regulations.—Further recommended uniform food standards were adopted during the year. These prescribe standards for ice cream and related products, sugar, glucose, edible fats and oils, metals in food, canned ham and artificial sweetening substances.

Regulations to provide for requirements for hand washing and utensil washing in food premises were also published.

The sale of arsenical weed killers was restricted to persons holding permits of purchase. This restriction will operate from 1st September, 1962.

(d) CONTROL OF INFECTIOUS AND NOTIFIABLE DISEASES AND TUBERCULOSIS

Statistics.—Infectious and notifiable diseases listed in the Second and Third Schedule of the Health Act and tuberculosis are notified to Local Boards of Health and the Central Board of Health. Tuberculosis is notified to the Central Board of Health in the first place.

Those notified in the years, 1959, 1960, and 1961 are shown in Table No. 3.

TABLE 3

Infectious Diseases	Cases			Deaths		
	1959	1960	1961	1959	1960	1961
Acute infective encephalitis.....	7	10	10	7	2	1
Amoebiasis	2	2	—	2	—	—
Diphtheria	16	1	5	1	1	—
Diarrhoea, infantile infective	4	3	3	—	—	—
Dysentery, bacillary	61	73	97	3	—	1
Influenza in epidemic form	1,163	12	—	99	—	—
Malaria	1	1	2	—	—	—
Meningococcal infection	7	3	5	3	1	2
Ornithosis	1	2	3	—	—	—
Paratyphoid fever	—	1	1	—	—	—
Poliomyelitis	1	12	44	1	—	3
Puerperal pyrexia	2	3	1	—	—	—
Salmonella infection	45	72	36	1	—	—
Scarlet fever.....	232	168	129	—	—	—
Trachoma	1	—	124	—	—	—
Tuberculosis, pulmonary	240	255	177	42	36	46
Tuberculosis, other forms	43	33	37	3	3	3
Typhoid fever	7	1	3	—	—	—

Notifiable Diseases	Cases			Deaths		
	1959	1960	1961	1959	1960	1961
Acute rheumatism	8	2	9	—	—	—
Brucellosis	1	—	—	—	—	—
Chorea (St. Vitis).....	1	—	1	—	—	—
Erythema nodosum	—	2	1	—	—	—
Encephalitis following another disease	4	16	1	1	—	—
Hydatid disease.....	—	1	1	—	2	—
Infective hepatitis.....	749	1,121	1,406	5	10	7
Lead poisoning	2	—	—	—	—	—
Ophthalmia	1	—	—	—	—	—
Rubella	87	105	66	—	—	—
Tetanus.....	6	3	2	4	2	2
Eclampsia.....	—	1	—	—	—	—
Homologous serum jaundice.....	—	—	1	—	—	—

The following diseases were reported more often during 1961 than during 1960 :—Diphtheria, bacillary dysentery, malaria, meningococcal infections, ornithosis, poliomyelitis, trachoma, typhoid fever, acute rheumatism, chorea and infective hepatitis.

Homologous serum jaundice was reported for the first time since it was made notifiable in 1954.

The following were reported less often :—Puerperal pyrexia, salmonella infection, scarlet fever, tuberculosis, erythema nodosum, encephalitis following other diseases, rubella and tetanus. The following occurred during 1960, and were not reported during 1961 :—Amoebiasis, influenza and eclampsia.

Diphtheria.—Five cases of diphtheria were notified during 1961. The first was an adult who had not been immunized. No source of infection was found and no secondary cases occurred. Culture of tonsillar membrane from this patient showed the presence of organisms morphologically resembling *C. diphtheriae* but there was no evidence on further investigation that these were *C. diphtheriae*.

The next three were children who were contacts of people who had been passengers on the ship *Patris*. They had not been immunized. One child was very ill and eventually died. The other two were mildly affected and recovered without complications. Another child who had been a passenger on the *Patris* contracted diphtheria and died in Melbourne. Organisms from this child, the three Adelaide children, and another child in Melbourne, were all of the same type. The organism concerned was diagnosed serologically as *C. diphtheriae*, type *gravis* (Nadjarian).

The fifth was a boy of 13 years of age who may have been immunized when an infant and not since. The diagnosis of diphtheria was not confirmed bacteriologically. No source of infection was found and no secondary cases occurred.

On the occurrence of each case of diphtheria the Local Board of Health concerned immunized people who were or may have been contacts if this action was indicated.

Typhoid.—Two cases of typhoid fever were reported and *S. typhi* organisms were isolated from the faeces of a third patient being investigated for the cause of jaundice.

The first patient was from Parkside Mental Hospital. Organisms recovered from faeces and gall bladder were *S. typhi* type C.1. No source of infection was found and it is possible that this patient had been a “carrier” for some time.

The second was an inpatient at the Queen Victoria Maternity Hospital. Organisms isolated were *S. typhi*, but did not belong to any known type, and no source of infection was found.

The third was a patient from the Enfield Receiving House who had also been an inmate of Parkside Mental Hospital for many years and could also have been a “carrier” for many years. Organisms isolated were *S. typhi* type F. One isolated case of typhoid fever caused by organisms of this type was reported during 1957.

As sewage from the Mental Hospital is treated at the Islington Sewage Farm it appears possible that these two carriers may have been the source of infection of sporadic cases of typhoid fever caused by organisms of the same kind that have occurred in the vicinity of the sewage farm, at Port Adelaide and at Semaphore in recent years.

Paratyphoid Fever.—One sporadic case of paratyphoid fever was reported at the end of 1960. Organisms isolated were *S. paratyphi* B. phage type “Scarborough H. strain.” *S. paratyphi* B was among a number of pathogens isolated about the same time from desiccated coconut but the phage type, 3b var. 2, was different.

Bacillary Dysentery.—Bacillary Dysentery was reported significantly more frequently during 1961 than during 1960. Reports were received sporadically from all parts of the State. *Sh. sonnei* was isolated from the majority of cases investigated bacteriologically. *Sh. flexneri* occurred more frequently in the northern areas. *Sh. shigae* was isolated from three children admitted to the Children’s Hospital. These were contacts of a family who had recently come from Lebanon. Investigation of all possible contacts did not reveal any source of infection and no subsequent reports of this type of dysentery have been received.

An investigation of the causes of diarrhoea was carried out by the Salisbury Local Board of Health. Over a period of three months, 75 persons with diarrhoea were investigated bacteriologically. *S. typhi-murium* was recovered from the faeces of nine, *Sh. sonnei* from one and an organism of the Providence group from another. No organisms of pathological significance were recovered from others.

Infective Hepatitis.—This disease was made notifiable in South Australia during 1954.

The number of reports received each quarter since then are shown in the following Table No. 4.

TABLE 4.—NOTIFICATIONS OF INFECTIVE HEPATITIS IN SOUTH AUSTRALIA

Year	1955	1956	1957	1958	1959	1960	1961	Totals
1st quarter	72	310	93	50	289	142	490	1,446
2nd quarter	103	162	48	38	127	154	237	869
3rd quarter.....	151	158	73	41	106	247	306	1,082
4th quarter.....	176	161	44	178	227	578	373	1,737
Totals	502	791	258	307	749	1,121	1,406	5,134

From this table it appears that the peak of the first wave of the present epidemic occurred during 1956 and the peak of the second wave may have occurred at the end of 1960.

It is considered that the above figures represent trends as all persons suffering from infective hepatitis are obviously not notified to Health authorities.

The disease has been notified from all parts of the State. In most areas it appears sporadically. It may then occur in epidemic form and later become sporadic again.

It is notified more frequently during the summer months when house flies are most prevalent. This suggests some association with flies but other factors less obvious may be responsible for increased notifications at this time of the year.

Limited information about the organism or organisms that cause infective heptatitis make it a difficult disease to control.

Unless an effective means of producing artificial active immunity becomes available, control or prevention of this disease may require a complete re-organization of the population’s food and toilet habits, more active control of suspected vectors and extensive alterations to accepted building and plumbing practices.

Salmonella Infection.—Though fewer salmonella infections were reported during 1961, it is not considered that the incidence of this disease is decreasing. Usually only those infections confirmed bacteriologically are reported and for every infection confirmed there are many others that are not confirmed and consequently not reported.

During the year an outbreak of food poisoning was discovered early enough to investigate it adequately. *S. typhi-murium* type U 124 was isolated from the faeces of three persons affected severely enough to be investigated. On investigation it was found that all those, approximately 25, who had eaten a type of sausage known as mordelli, at a party were similarly affected to varying degrees of severity. The sausage was the only food eaten from which the same type of organism was recovered. Of this group the three in hospital were the only persons reported.

Sporadic notification of this disease from scattered areas suggests that similar incidents occur frequently and that a significant percentage of the population are carriers of salmonella infection.

Influenza.—This disease is reported as an infectious disease when local health authorities decide that it is occurring in epidemic form. It was not reported during 1961. Vaccination with Commonwealth Serum Laboratories polyvalent influenza virus vaccine was provided for members of the Department of Public Health and the Hospitals Department. Deaths from influenza are recorded irrespective of whether the disease is being notified or not.

Poliomyelitis.—There was an increase in the incidence of poliomyelitis. Details of the Department’s control of this disease are given in the report of the Branch dealing with poliomyelitis control.

Tuberculosis.—The death rate from tuberculosis rose to 5.05 per 100,000 of the mean estimated population and the incidence fell to 21.9 per 500,000 of the estimated mean population.

Trachoma.—A child who had spent most of her life in the northern parts of the State was reported with trachoma. No secondary cases were found among recent contacts. The others suffering from this disease were aborigines reported from the far western part of the State where the disease appeared in epidemic form.

Other Diseases.—No significant alteration occurred in the incidence of other diseases.

Immunization.—Immunization returns from local boards are not complete at this stage.

(e) CONTROL OF VENEREAL DISEASES

During 1961, £2,339 was spent by the Department of Public Health on venereal disease investigation and treatment.

The majority of this amount was spent on bacteriological and serological tests for private practitioners.

A total of 65 patients were investigated at the Venereal Diseases Investigation Clinic for females at the Royal Adelaide Hospital.

During the year, the officer of health for the Barmera Local Board of Health reported that a patient from the Gerard Mission Station at Winkie had syphilis. On investigation, officers of the Department of Public Health, assisted by officers of the Institute of Medical and Veterinary Science found that 21 out of 34 people examined at the Gerard Mission showed serological evidence of gonococcal infection. Five of these also showed evidence of treponemal infection. The investigation was then extended to aborigines living in the Upper Murray area. Of 86 examined, 23 showed serological evidence of gonococcal infection and two of treponemal infection.

Those with serological evidence of disease were given 8-10 injections each of 1,000,000 units of procaine penicillin. Others were given one injection of 1,000,000 units of procaine penicillin.

As a number of children were among those showing evidence of infection, it was thought possible that low standards of sanitation may have been responsible, or partly responsible, for spread of the infection and others in the district may have also been infected.

Facilities for investigation were therefore made available and samples of blood from 242 persons were examined. Four who showed serological evidence of infection were referred to their own medical attendants for treatment.

Information received during the year indicates that there was an increase in the number of persons receiving treatment for gonorrhoea and syphilis in South Australia.

(f) SUPERVISION OF ENVIRONMENTAL SANITATION

Routine Inspections.—Officers of the Public Health Supervision Branch of the Department are responsible to the Central Board of Health for ensuring that provisions of the Health Act designed to keep the State healthy are carried out. They are also responsible to the Central Board of Health for ensuring that the requirements of the Food and Drugs Act are carried out throughout the State.

The Central Board and officers of the Branch act in a supervisory and advisory capacity to Local Boards of Health.

During 1961, it has been necessary to concentrate on assistance to Local Boards in matters of special difficulty or importance, to the exclusion of routine inspections.

Land Subdivision.—During the year a total of 31 areas for subdivision into building allotments were submitted by the Town Planner for inspection by officers of the Branch.

Reports were made on existing conditions, or conditions likely to develop that would affect the health of people or become nuisances, if the subdivision took place.

The main problems from a public health point of view were provision of water and disposal of refuse and liquid wastes. Many of the proposed subdivisions were in areas unlikely to have sewerage or reticulated water supplies for many years. In many subdivisions it was necessary to report that the areas of some proposed allotments were not considered sufficient for disposal of liquid wastes normally associated with domestic dwellings.

Brief details of other projects of special interests are given in the following paragraphs :—

Air Pollution.—Observations of air pollution and collections of matter deposited from the atmosphere were commenced in January. The object of the survey was to ascertain the extent of the problem, to determine the degree of atmospheric pollution for comparison with future surveys, and to decide whether action of any kind is needed. Observations and collections were continued throughout the year and the information obtained is now being assessed.

Individual complaints about factories causing a smoke nuisance have been investigated and steps taken to prevent further cause for complaint.

Winery waste discharge to the backwater of the River Murray at Renmark is causing a hydrogen sulphide problem and this is also being investigated.

Refuse Survey, Stirling.—In October, 1961, a survey was made of the Stirling Local Board area, for the purpose of assessing the need for a refuse collection and removal service in the district.

Many householders and business proprietors were interviewed and many agreed that such a service was necessary. A number of sites (disused quarries, depressions, and waste land) were inspected for disposal of garbage.

After receiving a report on the above survey the Central Board recommended that the Local Board consider a weekly refuse removal service and introduce a system of sanitary landfill or controlled tipping for refuse disposal.

Fly Survey.—During November, 1961, a survey of house flies was commenced in the Adelaide metropolitan area. Particular attention was given to their prevalence and breeding places.

Many local board areas were visited and places were inspected where animals and poultry were kept. Bowling greens and food premises were also visited. Other places inspected included goat farms, nurseries, private dwellings and refuse depots. Flies had access to and were breeding in organic material at all of the above places.

The local boards visited were generally aware of the problem. Some were insisting on the use of fly-sprays baits and insecticides to combat flies in their districts but others were doing very little about the problem.

The survey will be continued in 1962.

East-West Railway Line.—An inspection was made in conjunction with the Commonwealth Railways of living quarters and other installations associated with the railway line, between the South Australian and Western Australian border and Port Augusta.

Accidental Poisoning of Children.—A survey of 261 children admitted to the Children's Hospital with accidental poisoning was completed.

The survey revealed the following interesting facts. Fifty-five per cent of the children were from 18 to 30 months old. Fifty-nine per cent were males. Proprietary medicines were responsible for 25 per cent of poisonings and medicines prescribed by medical practitioners for 14 per cent. Kerosene and turpentine were each responsible for 10 per cent of poisonings and pesticides were responsible for 14 per cent. Arsenical weedkiller was responsible for 4 per cent. Mothers of 4 per cent of the children concerned were employed full-time or part-time in some occupation. In 43 per cent of cases the poison was mistaken for a drink.

Poisons were taken by 22 per cent of the children between 11 a.m. and noon and by another 22 per cent between 3 p.m. and 4 p.m. Poisonings occurred significantly more frequently during the winter months than during the summer months. The occupation of fathers of 14 per cent of children affected was given as clerk, of 12 per cent as labourer, of 10 per cent as mechanic and of 8 per cent as shop assistant. Fathers of the remainder were engaged in 33 other occupations.

The educational standard of the mothers was probably similar to that of a sample taken at random from the community. Four per cent had not reached grade 7 standard and 28 per cent had reached intermediate or leaving standard.

(g) SUPERVISION OF SEPTIC TANK SEWAGE DISPOSAL SYSTEMS

Plans and specifications of septic tank sewage disposal systems are required by the Health Act to be submitted to and approved by the Central Board of Health before installations are commenced. Approvals are given on the recommendations of officers of the Public Health Supervision Branch. All systems are inspected by officers of the Branch before permits to use the systems are issued.

During 1961, 4,005 installations were approved and 3,344 permits were issued. This is the highest number of installations dealt with in any year so far.

In the peripheral metropolitan area and adjacent district council areas much home building is in progress. The soils of these areas are generally not the most suitable for septic tank effluent disposal and need careful attention. Intending builders are advised of the possible difficulties and this advice is supplemented by site inspections to ensure the most effective use is made of the land available in relation to soil type and surface features. Even so, when all allotments of normal size are built on, difficulties are being experienced in many instances in disposing of septic tank effluent, and advice to householders on how to remedy these difficulties has to be given.

Arising from these difficulties and in an endeavour to remedy them the Branch's officers have carried out preliminary surveys at Barmera, Pinnaroo and Tea Tree Gully to determine whether a common drainage system with a central disposal point can be used.

Prolific mosquito breeding has been noted recently in septic tanks and effluent disposal areas. Particular attention is now being given to the insect proofing of the air vents of septic tank systems to prevent access of adult female mosquitoes to the liquid they need on which to lay their eggs. The use of chemical insecticides in septic tanks and soakage areas is also encouraged.

Investigations and reports to the Central Board have been made on proposed "all purpose" septic tank sewage disposal installations submitted by local boards for approval by the Central Board for compulsory installation. This procedure is required under the Local Government Act when a local authority requires the compulsory installation of "all purpose" installations in its area.

(h) SUPERVISION OF FOOD AND DRUGS SOLD IN SOUTH AUSTRALIA

Routine Supervision Surveys.—The Food and Drugs Act requires the Central Board of Health and local and county boards of health to ensure that food and drugs are sold in a “pure and genuine condition.” For this purpose officers of the Public Health Supervision Branch of the Department of Public Health and local and county boards are appointed inspectors under the Food and Drugs Act.

During routine inspections and health surveys by these officers, places where food and drugs are manufactured, produced or prepared for sale are inspected. Places where they are sold are inspected and, where necessary samples are taken and submitted to the Government Analyst for analysis. Table No. 5 shows the results of analyses carried out during 1961.

TABLE 5.—RESULTS OF ANALYSES OF FOOD AND DRUGS FOR 1961
(Showing *only* samples submitted for analysis)

Article	Number Submitted	Not to Standard or Incorrectly Labelled
Aerated waters or drinks	13	8 Contained organic halogen compound (leaking refrigerator unit)
Bread	6	3 2 deficient in edible fats and sugar ; 1 deficient in edible fats
Butter	4	4 Deficient in milk fat
Processed cheese	13	12 Excess phosphate emulsifier
Chocolate	12	1 Contained fat other than cocoa fat—should be labelled, “compound chocolate”
Cream	10	1 Contained gelatin
Fish—seelachs	1	1 Excess preservative
Honey	6	— —
Ice Cream	2	— —
Jam	6	— —
Milk—fresh	1,057	46 Deficient in fat or solids
Minced meat and sausage	70	30 Excess preservative
Pepper	1	— —
Seasoning	1	1 Excess preservative
Sherry	1	1 Labelling—Misrepresentation
Sweets	1	— —
Vodka	1	— —
Whisky	5	3 Labelling—Misrepresentation
Yoghurt	1	— —

Reconstituted Milk.—In late summer some milk producers find difficulty in maintaining the standard of milk with regard to S.N.F. The Central Board has power to issue permits for the reconstitution of milk where premises and equipment are suitable, and may specify the ingredients which will be used. The Central Board may also permit this milk, which must be pasteurized, to be sold as pasteurized milk.

The policy of the Central Board is to permit the addition of skim milk powder only.

However, during 1961, two companies added (in addition to skim milk powder) cream and water, thus increasing the bulk of the final product, which was sold as pasteurized milk. In all 218,254 gallons were so treated, and milk accounted for 92 per cent of the final product.

Two other companies were also given permits by the Central Board of Health during 1961, to add skim milk powder to milk and to label it “Pasteurized Milk” and to sell it as such. Under these permits, 20,544 lb. of skim milk powder were added to 1,139,144 gallons of milk deficient in solids-not-fat to bring the protein content up to standard before pasteurization. The product was then pasteurized and put in containers labelled “Pasteurized Milk.”

Before permits were granted, manufacturers’ premises, and equipment to be used in the reconstitution of milk were inspected and in each case considered to be suitable by officers of the Central Board of Health.

Desiccated Coconut.—Samples were taken from approximately 10 per cent of all containers of desiccated coconut imported into South Australia from overseas during 1961. These were submitted to the Institute of Medical and Veterinary Science for bacteriological examination.

If pathogens were isolated from any sample, coconut in all containers in the shipment bearing the same brand as the container from which the sample was taken were destroyed under the South Australian Food and Drugs Act.

Pathogens found in seven samples involved the destruction of approximately 18·7 tons of desiccated coconut in 419 containers. These were all from Ceylon.

The following pathogens were isolated :—

- S. oranienberg,
- S. Seftenberg,
- S. Zanzibar.

Supervision of Wines and Spirits.—During the period 1st January to 31st December, 1961, tests of wines and spirits offered for sale in 357 licensed premises were made. Premises included hotels, wine saloons and stores in metropolitan and country areas.

A total of 6,246 samples of wines and spirits were tested. This represents an average of 17·5 tests per visit.

Samples which were shown to be not of the required standard were obtained from seven premises.

The Central Board of Health authorized legal proceedings under the Food and Drugs Act against two of the licensees concerned and issued warnings to the remainder.

Food Poisoning.—Following a report from a medical practitioner that chocolate covered caramel sweets may have been the cause of a patient's illness, inquiries were made. The sweets yielded a growth of coagulase positive staphylococci when examined bacteriologically. The chain of distribution was traced and there were no obvious points of contamination. Nasal swabs of all the employees of the factory which produced the sweets when examined had a 43 per cent prevalence of staphylococcal organisms and in two cases staphylococci were found on the employees bodies. Subsequently, with the active co-operation of the management, the staff attended a food handlers' discussion group organized by the Branch.

Food Handlers.—During the year a food handlers course lasting for three days was conducted at Woomera. This was attended by the kitchen staff employed by the Weapons Research Establishment.

Meat.—A survey was made of slaughterhouses situated outside the Metropolitan and Export Abattoirs area which supply meat for human consumption to the metropolitan area. There are five such slaughterhouses, and they dressed approximately 5,049 carcasses per week.

Improvements to hygiene and sanitation at these places were made during the year. This meat is subsequently subjected to post-mortem inspection at the Metropolitan and Export Abattoirs Board's Meat Inspection Depot.

During 1961, 115,519 lb. of boneless beef and 1,045,393 lb. of boneless buffalo were brought into the metropolitan area from the Northern Territory. This meat is accompanied by a certificate of inspection from the Animal Industry Branch of the Northern Territory Administration. It is transported by air freight or refrigerated semi-trailer vans.

Animal Foodstuffs.—An inquiry into the incidence of salmonella organisms in animal foodstuffs of the meat and bone meal type was made. Some products were found to contain these organisms and action was taken to reduce their prevalence in these products.

Uniform State Standards for Food and Drugs.—The draft regulations based on Uniform Poisons Schedules and draft Therapeutic Substances Regulations were finalized. Promulgation of these regulations is anticipated in 1962.

The Food and Drugs Advisory Committee considered additional uniform standards and regulations. These included the sale of pet meat in food shops, the manufacture of gelato and similar frozen ices. Regulations dealing with these matters in South Australia are pending.

(i) SUPERVISION OF INDUSTRIAL HEALTH

Administration.—Industrial health problems referred to the Department are increasing in complexity due to new processes, an increasing number of substances being used in industry and novel industrial techniques.

These problems are, if smaller in total numbers than those occurring in the more industrialized Eastern States, almost as varied in the range of potential hazards encountered and call for a new vigorous approach by this Department towards their solution requiring an increase of basic facilities.

At present investigations of problems are dependent upon consultations with experts, services provided by other government departments as well as private and semi-governmental establishments, and a good reference library covering environmental health topics which is slowly being built up.

Some of the problems encountered in industry are straight forward if the necessary equipment and facilities for its maintenance and repair are available. Other problems are still in the field of research and require extensive investigation before potential hazards can be adequately evaluated.

New Equipment Obtained.—In September, a South African modified Thermal Precipitator was obtained for dust collection and a binocular microscope for counting dust samples.

For monitoring ionising radiation, two Ekco Radiation Monitors, N.555 (for gamma) and N.596 (for beta and gamma) have been obtained, making it now possible to monitor dose rates in the vicinity of beta and gamma emitting radioisotopes.

Industrial Dusts and Fumes.—Industrial dust hazards investigated within the limits of available facilities include those associated with foundries, sand and metal blasting workshops, talc and other mineral grinding plants, a more recently developed spray-on asbestos fire-proofing treatment, (in these tests a comparison was made of results obtained with Konimeter and modified thermal precipitator), wood and laminex table cutting, asbestos sheet manufacturing and dust released from power house stacks.

Toxic Gases and Vapours.—Methyl bromide fumigation, as carried out at the Australian Barley Board Depot and the Australian Wheat Board Store at Port Adelaide was investigated, and conditions found appeared to provide reasonable safeguards against the occurrence of any acute hazards (equipment was not available to evaluate chronic hazards).

An accidental release of methyl chloride refrigerant was also investigated and precautions taken to ensure health and safety.

Phosphine concentrations in the vicinity of phostoxin fumigated wheat were investigated at Wallaroo and Port Lincoln, both at the silos and on board ship, and a number of recommendations made.

Ionising Radiation.—Consideration has been given to basic matters such as—

- (a) disposal of waste, where a practical approach has been worked out ;
- (b) Radioactive Substances and Irradiating Apparatus Regulations under the Health Act.

Proposed regulations have been overhauled and some adjustments made.

With the equipment obtained, investigations have begun in regard to users of radioisotopes and facilities for their handling, storage, use, monitoring and disposal. These are continuing.

Industrial Hygiene Committee.—The Principal Medical Officer attended two meetings of the Industrial Hygiene Committee of the National Health and Medical Research Council held during the year.

Meeting of Scientific Officers.—The biophysicist attended a meeting in Sydney, New South Wales of scientific officers from Commonwealth and State Occupational Health units. It was resolved at this meeting to investigate and adopt standard methods of sampling and analysis of atmospheric contaminants in the industrial environment. Discussions covered lead, mercury, chlorinated and aromatic hydrocarbons, hydrogen sulphide, phosphine, sulphur dioxide and dust, all of importance in South Australia.

These meetings are most important for exchange of information and sharing of the valuable experience gained by the larger States.

Department of Mines Uranium Project.—Pre-employment and annual periodic medical examinations of persons employed on the uranium project of the Department of Mines were continued. During the year, 106 medical examinations were completed in Adelaide. Periodic blood and X-ray examinations of employees at Radium Hill and Port Pirie were completed. It was decided that clinical examinations would not be done on employees at Radium Hill when it was known that the mine there would be closed. It was also decided to postpone clinical examinations of employees at Port Pirie until early in 1962. Periodic X-ray examinations were done at Radium Hill, Port Pirie and Adelaide by the X-ray units of the Department of Public Health ; blood examinations at Adelaide were done at the Institute of Medical and Veterinary Science ; and at Port Pirie and Radium Hill blood examinations were done by the mobile unit of the Institute of Medical and Veterinary Science.

Medical Examinations for Employment and to Contribute to the South Australian Superannuation Fund.—Medical examinations of applicants for permanent appointments in the Public Service are done by medical officers of the Branch. In addition, medical examinations of persons, except teachers and railway employees desiring to contribute to the South Australian Superannuation Fund or in receipt of invalid pensions from the Fund are done by medical officers of the Branch.

A total of 608 of the above examinations were completed during 1961. These include medical examinations of applicants for positions in the State Bank and the South Australian Institute of Technology and for permits to visit reserves for aboriginals.

Silicosis Committee.—Medical examinations, required by the Silicosis Committee, of employees of the Department of Mines working where a silicosis hazard exists were also done.

(j) HEALTH EDUCATION

Health education is regarded by the Department of Public Health as one of its most important functions and officers of the Public Health Supervision Branch again contributed to the health education activities of the Department.

“Good Health” and “Newsletters for Medical Officers of Health.”—A quarterly magazine and newsletters are used by the Department as a regular means of disseminating information on public health matters. Articles were written by officers of the Branch for *Good Health*.

In each newsletter, reference is made to one or two items of current public health interest. Diseases reported to the Central Board and local boards during the previous month are also included. In this way the Department keeps officers of health and local boards informed of the incidence of disease in South Australia and recent developments in public health work and disease prevention.

Items of interest referred to in newsletters were incidence of disease during the previous year ; routine immunization ; quadruple vaccine ; reconstituted milk ; hazards of dry cleaning at home ; Salmonella infections ; venereal diseases with special reference to gonorrhoea ; trachoma ; infective hepatitis ; community drains for disposal of waste liquids ; National Health Week, 1961 ; diseases notified in other Australian States compared with those notified in South Australia ; Amended Food and Drugs Regulations ; flies ; “guide” dogs in food premises ; and a fly survey in the metropolitan area.

Royal Society of Health.—Examinations for diplomas and certificates of the Royal Society of Health are conducted by the Society’s Board of Examiners in South Australia. Theoretical training of candidates in the metropolitan area is provided by the Institute of Technology.

Correspondence courses are also arranged by the Technical Correspondence School of the Education Department. Material for the courses is prepared and the correcting of assignments is done by the Chief Inspector of the Branch. Practical work required by the Royal Society of Health for candidates for its diplomas and certificates is arranged by officers of the Branch.

At the last examinations of the Royal Society of Health in Adelaide, 37 candidates sat for the Diploma of the Royal Society and four sat for the Meat and Other Foods Certificate. Of these 21 obtained the Diploma and four the Certificate.

National Health Week.—National Health Week was held from 15th October to 21st October, 1961.

The theme chosen for Health Week, A Healthy Child—A Healthy Nation—was again a broad one.

A child’s health is everyone’s responsibility. Every child should be taught the principles of healthy living in the home, at school, at work and at play. Prevention of disease by routine immunization is particularly applicable to children. The protection of children from injury by all forms of accidents is becoming an increasingly important item in the health of children. These were a few of the ideas developed in Health Week publicity of 1961. The Department was again assisted by Leonard Barker and Associates through their Adelaide Associates Shan Hoskyns and Associates Limited.

Other Health Education Projects.—During the year officers of the Branch took part in many special health education projects arranged by the Department, local boards and other organizations.

3. SCHOOL HEALTH BRANCH

This year saw the retirement of Dr. M. Casley Smith and the appointment of Dr. C. O. Fuller as the new Principal Medical Officer. He is the fourth to hold this position since the inception of the School Health Services in 1909. The professional staff during the year consisted of six full-time and three part-time medical officers, one senior dentist, nine dental officers, 10 nurses, 10 dental assistants, one full-time audiologist and one part-time audiologist and two audiometristes. Several changes of staff occurred requiring replacements and Dr. Norman Eadie was transferred to full-time duties with the Deafness Guidance Clinic.

MEDICAL SERVICES

The number of children examined in State schools was 68,615 in 1961. This figure includes 68,071 children seen in schools by Medical Officers of the School Health Services and 544 children seen by local doctors in Eyre Peninsula schools acting on behalf of this section. The school enrolment in 1961 was 176,823. To achieve the aim of an examination for each child every three years it is necessary to see at least one-third of the total enrolment each year. In 1961, this figure of one-third has been exceeded. Medical officers of the Department visited 252 schools during the year and Eyre Peninsula doctors visited six schools.

The following table (Table 6) shows the number of schools visited, children examined and defects noticed by medical officers of the School Health Services :—

TABLE 6

	Metropolitan	Country	Total
Schools visited	109	143	252
Children examined	46,885	21,186	68,071
Defects found :—			
Vision (excluding spectacles)	2,782	1,102	3,884
Wearing spectacles.....	2,827	842	3,669
Hearing	1,155	761	1,916
Nose and throat	592	217	809
Teeth (excluding children under dental treatment)	9,463	3,541	13,004
Heart	232	114	346
Skin	1,128	370	1,498
Lungs	90	49	139
Epilepsy.....	61	17	78
Allergies	2,104	1,128	3,232
Other conditions, including leg deformities, cerumen, colour blindness and eneuresis	7,206	3,534	10,740
Total defects recorded	27,640	11,675	39,315

To enable comparisons to be made with other years, Table 7 shows, for the last seven years, the rates per 10,000 children examined of certain defects formally notified to parents.

TABLE 7.—DEFECTS NOTICED PER 10,000 CHILDREN EXAMINED

Year	Vision	Hearing	Nose and Throat	Teeth	Heart	Allergies	Epilepsy
1955	691	252	256	3,136	38	.*	*
1956	738	244	303	2,599	52	*	*
1957	622	180	231	3,009	48	315	5
1958	605	213	166	2,444	61	321	10
1959	776	140	146	2,092	60	364	12
1960	706	233	104	2,059	57	476	11
1961	571	282	119	1,912	51	475	11

* Not recorded

Notices were sent to the parents of 13,004 children needing dental attention. Children already under private dental supervision and children who were examined by departmental dentists are not included in this figure.

Eyre Peninsula Scheme.—Doctors residing at six centres on Eyre Peninsula assisted the School Health Services by examining children attending schools in their areas. Five hundred and forty-four children attending six schools were examined. The Department appreciates the work of those doctors who have been able to continue their programme during 1961. It is anticipated that more doctors will be able to participate in 1962.

TABLE 8.—EYRE PENINSULA SCHEME

Schools visited	6
Children examined	544
Defects formally notified :—	
Vision (excluding spectacles)	62
Wearing spectacles	14
Hearing	6
Nose and throat	26
Teeth	59
Heart	3
Skin	1
Lungs	—
Allergies.....	11
Epilepsy	—
Other conditions (not elassified)	41
Total defects recorded.....	223

Audiometric Testing.—Audiometric testing was conducted in 194 State schools and in 34 pre-school kindergartens associated with the Kindergarten Union of S.A. Inc. A total of 46,274 children had pure tone audiometer tests. These tests were carried out by medical officers, audiometristes and school nurses. Of the children tested 2,100 were found to have some hearing loss at the time of testing. Parents were notified accordingly and arrangements were made, where possible, for further tests by the Deafness Guidance Clinic in their sound-proof room. Statistics of these audiometric tests are shown in Table 9. These figures are independent of Table 6.

TABLE 9.—AUDIOMETRIC TESTING IN SCHOOLS

	Pre-school Kindergartens	Metropolitan Schools	Country Schools	Total
Schools visited	34	102	92	228
Children tested	1,647	31,349	13,278	46,274
Defects	43	1,495	562	2,100

The number of audiometric tests made in the sound-proof room of children referred by all officers was 2,611.

Medical Examinations Apart from School Children.—One thousand six hundred and thirty-eight female and 1,172 male students entering or leaving the Teachers Colleges, or applying for Leaving and Leaving Honours Teaching Scholarships, Junior Teaching positions, Laboratory Assistantships and temporary teaching positions were medically examined in 1961. Teachers referred by the Education Department were seen before returning to duty from sick leave. All applications from teachers for invalidity pensions were considered and where necessary, the applicants were examined. Direct entries to the service and teachers applying for superannuation were also examined. A total of 469 teachers were seen during 1961.

Children travelling interstate with sports teams were medically examined.

Examinations were also undertaken for female public servants seeking permanent appointment or superannuation.

Health Lectures.—Dr. C. O. Fuller took over the lecturing at Wattle Park Teachers College and gave three lectures weekly for the full academic year. In the third term, Dr. Fuller and Dr. Sprod gave the series of special subject lectures to Adelaide Teachers College students and those at Currie Street and Thebarton Annexes. Dr. Sprod also continued lecturing to the short course groups at Currie Street Annex. Examinations were set and marked by the two officers.

The Principal Medical Officer and Mr. H. Mutton from the Adelaide Teachers College are examining the present syllabus of hygiene lectures with a view to introducing a new Health Education course to replace the old Hygiene course. An extremely useful week was spent in Western Australia studying the Health Education programme being introduced to secondary schools as a pilot study.

Mothers' Clubs.—There were a number of requests for speakers at Mothers' Clubs and School Welfare Clubs. Thirty-five clubs were addressed by medical officers and dentists of this Section.

Paediatric Refresher Course.—Permission was granted for medical officers to attend the Paediatric Refresher Course at the Adelaide Children's Hospital. Five doctors were able to attend.

Follow-up Work.—This was continued by the School Nurse detailed for this work who was assisted from time to time by the senior nurse. Eighty-three metropolitan schools were visited once. Twenty-one of these schools were visited a second time when outstanding cases were further investigated and the parents were either visited or contacted by telephone. Forty-two home visits were made.

First Follow-up—(83 schools)—
3,527 had received attention.
1,206 had received no attention.

Second Follow-up—(21 schools)—
160 had received attention.
103 had received no attention.

Defect Notices.—Under an arrangement approved by the Australian Medical Association, 2,602 forms S.H.S. 5 were returned by doctors and specialists to whom children were taken by parents. Their co-operation is gratefully acknowledged as it enables this section to complete their records and follow the progress of these children.

S.H.S. 5 Forms returned—
Metropolitan 2,001
Country 601

Infections in School Children.—The numbers of communicable diseases reported to teachers in State schools are shown in Table. 10.

TABLE 10

Year	Diphtheria	Scarlet Fever	Measles	Rubella	Whooping Cough	Chicken Pox	Mumps	Polio- myelitis	Infective Hepatitis	Other Conditions
COMMUNICABLE DISEASES										
1957.....	1	184	499	1,496	97	2,195	1,556	3	26	83
1958.....	—	131	3,469	232	163	2,078	987	2	53	116
1959.....	2	154	943	110	39	1,948	2,374	—	110	106
1960.....	—	163	3,707	68	117	1,588	2,436	—	387	85
1961.....	1	130	766	67	51	2,438	461	1	359	113
COMMUNICABLE DISEASES PER 10,000 CHILDREN ENROLLED										
1957.....	0.1	12.6	34.3	102.7	6.7	150.7	106.8	0.2	1.8	5.7
1958.....	—	8.5	225.4	15.0	10.6	135.0	64.1	0.1	3.4	7.5
1959.....	0.1	9.4	58.0	6.7	2.4	119.9	146.2	—	6.7	6.5
1960.....	—	9.5	218.0	4.0	6.9	93.4	143.2	—	22.6	4.9
1961.....	—	7.4	43.2	3.7	2.9	137.7	26.0	—	20.3	6.4

The total number of these communicable diseases reported was 4,387. This is less than in 1960.

DEAFNESS GUIDANCE CLINIC

The Deafness Guidance Clinic completed its fifth year with a total of 1,691 attendances by children. Of these 1,118 were initial attendances and 573 were retests. The staff was increased by one when Dr. N. Eadie was transferred from the medical section to full-time work as an audiologist with the Clinic. Appointments are now offered on a five day a week basis.

The 1,118 new cases came from the following groups :—

Pre-school	46
Primary School	912
Secondary School	160

They were referred from the following sources :—

Officers of School Health Service (Doctors and Audiologists)	931
Family Doctor	92
Parents :	54
Others (Kindergarten Union, Teachers Psychology Branch and various).....	42

The 573 retests came from the following groups :—

Pre-school	14
Primary School	492
Secondary School	67

Of those attending for initial tests, 285 were discharged as having no significant hearing loss, 557 were referred to their family doctors and 69 to specialists or hospitals. Two hundred and seven with doubtful losses were requested to return for further testing before final assessment.

Of those attending for retest, 152 were discharged, 262 were referred to family doctors, 35 to specialists or hospitals and 124 were requested to return for further testing before final assessment.

The liaison with the Education Department through the Advisory Panel for Deaf and Hard of Hearing Children has been maintained. The monthly lists of all children discovered to have a significant loss have been continued and 182 were made the subject of specific letters. Of these 130 were discovered at the initial test. Fifty-two that were listed after retesting were reported mainly because of lack of response to treatment, change of school or lack of progress at school. Twenty-four children were referred to special units.

In addition to children seen, tests were carried out on 79 student teachers, scholarship applicants and public servants.

TABLE 11.—ATTENDANCES AT DEAFNESS GUIDANCE CLINIC, 1961

TOTAL ATTENDANCE

	Male	Female	Total
Metropolitan Pre-school	29	21	50
Metropolitan Primary School	718	449	1,167
Metropolitan High School	121	66	187
Country Pre-school	4	6	10
Country Primary School	146	91	237
Country High School	23	17	40
Government Departments	38	41	79
	1,079	691	1,770

VISITS

	Male	Female	Total
Initial visit	715	468	1,183
Retests	364	223	587

DISPOSAL

General Practitioner	Otologists	A.C.H.	R.A.H.	Retests	Discharges
829	50	45	10	337	499

One hundred and eighty-two of these cases were referred to the Advisory Panel for Deaf and Hard of Hearing Children.

- Also—
- 5 to Speech Therapy.
 - 11 to Psychology Branch.
 - 5 to Commonwealth Acoustic Laboratory.
 - 2 to Child Guidance.
 - 1 to Children’s Welfare.

TABLE 12.—HEARING TESTS AT SCHOOLS, 1961

Schools Visited	Schools	Males	Females	Total	Defects	
					Males	Females

CHILDREN TESTED AT PRIMARY SCHOOLS

Metropolitan—						
Doctors	40	7,732	7,081	14,813	367	273
Audiometristes	38	5,826	6,185	11,011	352	262

CHILDREN TESTED AT HIGH SCHOOLS

Doctors	24	4,210	1,315	5,525	200	41
Audiometristes	—	—	—	—	—	—

CHILDREN TESTED AT PRE-SCHOOL KINDERGARTENS

Audiometristes	34	871	776	1,647	24	19
Total Metropolitan, Primary, High and Pre-school Children tested—Doctors and Audiometristes.....	136	18,639	14,357	32,996	943	595

CHILDREN TESTED AT PRIMARY SCHOOLS

Country—						
Doctors	83	5,344	4,884	10,228	263	184
Audiometristes	—	—	—	—	—	—

CHILDREN TESTED AT HIGH SCHOOLS

Doctors	9	1,569	1,481	3,050	71	44
Total Country Primary and High Schools tested—Doctors and Audiometristes	92	6,913	6,365	13,278	334	228
Grand Total—Metropolitan and Country	228	25,552	20,722	46,274	1,277	823

TABLE 13.—DEAFNESS GUIDANCE CLINIC, 1961

INITIAL TESTS			
	Male	Female	Total
Pre-school Children—			
Metropolitan	22	18	40
Country	3	3	6
	25	21	46
Primary School Children—			
Metropolitan	455	310	765
Country	97	50	147
	552	360	912
High School Children—			
Metropolitan	91	38	129
Country	15	16	31
	106	54	160
Government Departments	32	33	65
	715	468	1,183

REFERRALS	
School Health Services.....	931
Kindergarten Union	14
Doctors	92
Parents	54
Government Departments	64
Teachers	13
Psychology	12
Various	3
	1,183

DISPOSALS						
	General Practitioner	Otologists	A.C.H.	R.A.H.	Retests	Discharged
Pre-school.....	24	—	2	—	7	13
School Age	533	28	31	8	200	272
Government Departments	6	1	—	—	4	54
Total	563	29	33	8	211	339

One hundred and thirty school children were referred to the Advisory Panel for Deaf and Hard of Hearing Children
Also—
5 to Speech Therapy.
2 to Commonwealth Acoustic Laboratory.
9 to Psychology.
2 to Child Guidance.

TABLE 14.—DEAFNESS GUIDANCE CLINIC, 1961

RETESTS			
	Males	Females	Total
Pre-school Children—			
Metropolitan	7	3	10
Country	1	3	4
	8	6	14
Primary School Children—			
Metropolitan	263	139	402
Country	49	41	90
	312	180	492
High School Children—			
Metropolitan	30	28	58
Country	8	1	9
	38	29	67
Government Departments	6	8	14
	364	223	587

DISPOSALS						
	General Practitioner	Otologists	A.C.H.	R.A.H.	Retests	Discharged
Pre-school.....	8	—	—	—	5	1
School Age	254	21	12	2	119	151
Government Departments	4	—	—	—	2	8
Total	266	21	12	2	126	160

Fifty-two school children were referred to the Advisory Panel for Deaf and Hard of Hearing Children.

Also—

- 2 to Psychology Branch.
- 3 to Commonwealth Acoustic Laboratory.
- 1 to Children's Welfare.

SCHOOL DENTAL SERVICES

Work in Country Schools.—The school year began with the School Dental Branch having nine dentists on strength, two of them, Mr. A. D. Robertson and Mr. R. Miller, being recent graduates from the Department's Studentship Scheme. Mr. A. I. Kingston joined the staff about a month later after successfully completing his dental course. Mr. Kingston was also a graduate from the Studentship Scheme, which has produced seven of the 10 dentists employed during this year.

Since it was decided to treat children yearly, it has only been possible to treat one-third to one-half of the children in each area. Figures so far indicate that a school population of approximately 600 to 700 children can be treated yearly by a school dentist, once the backlog of work in a new area has been overcome.

The areas treated during the year were :—

- Area No. 1.—Far West Coast.
- Area No. 2.—Eastern Eyre Peninsula.
- Area No. 3.—Far North.
- Area No. 5.—Mid-North East.
- Area No. 7.—Kangaroo Island.
- Area No. 10.—South-West.
- Area No. 11.—Murray Flats.
- Area No. 12.—Murray Mallee.
- Area No. 13.—Upper South-East.

Area No. 1.

Previously treated to Grade 3 level in 1960. Children in Grades 1 to 4 in the area were treated this year. In 1960, 597 children were treated at an average of 4·2 fillings and 1·6 extractions per child. In 1961, 213 children were treated at an average of 6·4 fillings and 1·3 extractions per child.

These figures appear to indicate a deterioration in the dental picture in this area. It is believed however, that this is not the case, and that the widely divergent figures are due to the difference in attitude of the two dentists concerned with regard to "what can safely be left until next visit."

Area No. 2.

The schools treated in this area this year were treated two years and more previously, in 1959, when 346 extractions and 1,572 fillings were completed for 297 children, at an average of 1·2 extractions and 5·3 fillings per child.

In 1961, 381 extractions and 2,069 fillings were completed for 382 children at an average of 1·0 extractions and 5·4 fillings.

The two dentists responsible for the figures shown in these two periods are considered comparable in attitude, and it is suggested that this comparison indicates a period of two to three years between treatments to be rather too long to reduce the incidence of dental caries.

Area No. 3.

The schools treated in this area this year were treated in 1960 and in part in 1957, 1958 and 1959.

In 1960, nine months only were worked in which 366 extractions and 889 fillings were completed for 322 children at an average of 1·1 extractions and 2·8 fillings per child.

This year 694 children in 17 schools were treated, a total of 123 extractions and 2,161 fillings being completed at an average of 0·2 extractions and three fillings per child.

This is a good result, especially the low extraction figure. Improvement beyond this point is not expected, as a new intake of 5 year olds, usually untreated, are included yearly.

Area No. 5.

Previously treated in 1957 and in 1960. Treated again this year by the same dentist as in 1960.

In 1960, 686 extractions and 2,375 fillings were completed for 477 children at an average of 1·4 extractions and 5 fillings per child.

In 1961, 696 children were treated, 422 extractions and 2,669 fillings being completed at an average of 0·6 extractions and 3·8 fillings per child. While this is a definite improvement over the 1960 figures, even better results are expected in 1962, as the 1961 figures include a previously untreated school with an average attendance of 120 children.

Area No. 7.

Untreated since 1956. Because there is no private dentist practising on Kangaroo Island the services of the school dentist were made available to all school children for emergency treatment. All children in Grades 1 to 3 at Kingscote Area School were offered systematic treatment.

Three hundred and fifty patients were treated for emergencies. Six hundred and twenty-four fillings, 404 extractions and 8 root canal treatments being completed for them.

In addition, 144 children in Grades 1 to 3 at Kingscote Area School were given systematic treatment.

In all, 784 extractions and 2,224 fillings were completed for all patients. Average figures in this case are not given because they would tend to be misleading because of the high percentage of emergency patients.

Area No. 10.

Part treated at yearly intervals since 1957 by the same dentist.

In 1957, 643 extractions and 2,217 fillings were completed for 634 children at an average of 1 extraction and 3.5 fillings per child.

In 1961, 762 extractions and 2,227 fillings were completed for 948 children at an average of 0.8 extractions and 2.3 fillings per child.

In 1957, figures for fillings in this case are low compared with initial treatment figures for other areas probably due to the attitude of the dentist as to "what can safely be left until a later visit."

Area No. 11.

Treated in 1957 and 1958 and part treated in 1960 and 1961. The schools visited in the last two years were treated by the same dentist.

In 1960, 351 extractions and 1,763 fillings were completed for 317 children at an average of 1.1 extractions and 5.6 fillings per child.

In 1961, 459 children were treated, 213 extractions and 1,631 fillings being completed at an average of 0.5 extractions and 3.6 fillings per child.

Definite improvement is shown in this area, but an even better result is expected in 1962, as figures from four new schools which had been treated previously as early as 1957 are included.

Area No. 12.

This area was treated for the first time this year.

All schools in the area were visited within the first six months of the year, treatment being offered to children in Grades 1 to 3. Approximately half of the schools in the area were revisited in the second half of the year and in these schools treatment was offered to children in Grades 1 to 5.

The number of children treated in this instance cannot accurately be determined due to the manner in which records are kept. As some children have been treated twice in this area, the number given refers to the number of full treatments performed rather than the number of individuals treated.

One thousand and twenty-five full treatments were performed in which 1,030 extractions and 3,143 fillings were completed at an average of 1 extraction and 3.1 fillings per full treatment. Treatment producing figures such as this, while possibly justifiable probably leaves rather too much "until the next visit."

Area No. 13.

Five schools in this area were visited this year, only two of which had been visited previously, hence no figures can be shown to demonstrate progress, if any, when compared with work done in earlier years.

This year, 278 children were treated in this area, 202 in schools that had not previously been treated. Two hundred and fifty-seven extractions and 2,197 fillings were completed at an average of 0.9 extractions and 7.9 fillings per child.

Work in Children's Welfare Institutions.—Work was done in the following Children's Welfare Institutions in school holidays during the year: Magill Boys Training School, Vaughan House, Seaforth Home, Glandore Boys Home and Lochiel Park Boys Training Centre.

Work was also done at Magill Boys Training School by the Senior Dentist during the last three weeks of the last school term.

One hundred and forty-four extractions, 1,015 fillings and 374 other treatments were completed. The total number of individuals receiving treatment cannot be determined from the records at hand.

Summary of Work for the Year.

In Country Schools—

Children examined	9,093
Children offered treatment	6,306
Children accepting treatment	5,189
Fillings	21,081
Extractions	4,437
Other treatment	6,301
Number of visits for treatment	15,162
Number of schools visited	100

In Children’s Welfare Institutions—

Fillings	1,015
Extractions	144
Other treatments	374
Number of institutions visited	5

The number of individuals treated cannot be ascertained, as some children in institutions were treated on two or possibly three occasions during the year.

Work completed this year has shown that different dentists have markedly different views with regard to what dental work should be done immediately and what can safely be left until a later date. Recent dental opinion holds that the caries/time relationship is a geometrical one rather than an arithmetical one ; that removal of *all* caries, by lowering the oral lacto bacillus count, reduces the rate of formation of new cavities.

In view of this, it is considered that dentists who ensure that *all* caries is removed from the mouths of the children in their care will produce a better result in the long run even though the number of children handled in the initial stages in an area will be necessarily small.

This caries/time relationship also justifies the treatment of children at frequent intervals. It will be interesting to see the results of treatment in Area No. 2 in 1962, which will produce figures of caries increment in a one year period that can be compared with that in a two to two and a half year period.

4. POLIOMYELITIS BRANCH

Incidence.—During the year ended 31st December, 1961, there was a rise, compared with the four previous years, in the number of cases of poliomyelitis reported. The yearly cases reported since the last epidemic started in May, 1949, appear in Table 15.

(NOTE.—A case “reported” does now necessarily mean that it was confirmed as poliomyelitis.)

TABLE 15.—REPORTED CASES OF POLIOMYELITIS IN SOUTH AUSTRALIA, 1949-1961.

Year	Cases			Deaths		
	Metropolitan Area	Other Districts	Total	Metropolitan Area	Other Districts	Total
1949.....	490	90	580	15	5	20
1950.....	816	157	973	7	10	17
1951.....	1,012	479	1,491	39	23	62
1952.....	435	274	709	7	5	12
1953.....	287	111	398	11	10	21
1954.....	123	53	176	2	3	5
1955.....	110	72	182	5	1	6
1956(a)	58	64	122	2	1	3
1957.....	5	11	16	1	—	1
1958.....	5	5	10	1	1	2
1959.....	1	—	1	—	—	—
1960.....	9	3	12	—	—	—
1961.....	33	11	44	3	—	3

(a) The Salk immunization programme started in South Australia on 28th June, 1956.

Of the forty-four (44) cases of suspected poliomyelitis reported during 1961, forty-three (43) were considered to be suffering from poliomyelitis ; details of the forty-four (44) cases are shown in Table 16.

TABLE 16.—DETAILS OF FORTY-FOUR SUSPECTED CASES REPORTED IN YEAR ENDING 31st DECEMBER, 1961

Case No.	Age	Sex	Specimens Available	Virus Isolated	Paralytic Illness	No. of Salk Injections
REGARDED AS POLIOMYELITIS						
1	2·8 years	Male	Yes	Type 3	Yes	—
2	42 years	Female	Yes	Type 3	Yes	—
3	3·2 years	Female	Yes	Type 3	No	—
4	1·3 years	Male	Yes	Type 3	Yes	1
5	2·11 years	Female	Yes	Type 3	No	—
6	38 years	Female	Yes	Type 3	Yes	—
7	26 years	Male	Yes	Nil	Yes	—
8	6·9 years	Male	Yes	Type 3	Yes	—
9	7 years	Male	Yes	Type 3	Yes	—
10	3 years	Female	Yes	Type 3	Yes	—
11	25 years	Male	No	Nil	Yes	—
12	3·7 years	Male	Yes	Type 3	Yes	—
13	22·3 years	Male	Yes	Type 3	Yes	—
14	54 years	Male	Yes	Type 3	Yes	—
15	19 years	Male	Yes	Nil	Yes	—
16	15 years	Female	Yes	Type 3	Yes	—
17	37 years	Female	Yes	Type 3	Yes	—
18	2·4 years	Male	Yes	Type 3	Yes	—
19	1·3 years	Female	Yes	Type 3	Yes	—
20	24 years	Male	Yes	Type 3	Yes	—
21	5 months	Male	Yes	Type 3	No	—
22	4·3 years	Male	Yes	Type 3	Yes	—
23	2·8 years	Male	Yes	Type 3	No	1
24	1·7 years	Female	Yes	Type 3	Yes	—
25	1·1 year	Male	Yes	Type 3	Yes	—
26	2·8 years	Male	Yes	Type 3	Yes	1
27	3·6 years	Female	Yes	Type 3	Yes	—
28	1·1 year	Female	Yes	Type 3	Yes	—
29	33 years	Male	Yes	Type 3	Yes	—
30	32 years	Male	Yes	Nil	Yes	—
31	3 years	Male	Yes	Not yet confirmed	Yes	—
32	37 years	Male	Yes	Nil	Yes	—
33	19 years	Male	Yes	Type 3	Yes	—
34	25 years	Female	Yes	Not yet confirmed	Yes	—
35	9 months	Female	Yes	Type 3	Yes	2
36	24 years	Male	Yes	Type 3	Yes	—
37	22 years	Female	Yes	Type 3	Yes	—
38	7 years	Male	Yes	Type 3	No	—
39	9 years	Male	Yes	Type 3	Yes	2
40	11 months	Male	No	Nil	Yes	—
41	3·10 years	Male	Yes	Type 3	Yes	—
42	2·3 years	Male	Yes	Type 3	Yes	—
43	25 years	Female	Yes	Type 1	Yes	—
NOT REGARDED AS POLIOMYELITIS						
1	4 years	Male	Yes	Type 3	No (carrier state)	—

NOTE.—Cases 4 and 23 and 26 each received one injection only—7 months, 12 months and 16 months respectively, before their illness ; case 35 received two injections—the first, two months and the second, one month before her illness ; ease 39 received two injections—the first, 21 months and the second, 18 months before his illness.

The youngest patient was five months of age, and the oldest was 54 years of age ; 40 per cent of the patients were aged between 15 years and 54 years.

Cases 6, 7 and 11 were fatal ; none of these patients, whose ages were 38 years, 26 years and 25 years respectively, had received any poliomyelitis immunization injections.

Virus Isolations.—It will be seen from the above table that thirty-five (35) poliovirus isolations during 1961 were Type 3, and only one isolation (case 43) was of Type 1. This patient was infected in New South Wales and was transferred to South Australia at the time of her acute illness. At the time of her infection there was a Type 1 outbreak in New South Wales. In 1960, all poliovirus isolations in South Australia were of Type 1. Table 17 sets out the types of polioviruses isolated in South Australia since 1956.

TABLE 17.—NUMBER OF EACH TYPE OF POLIOVIRUS ISOLATED FROM SOUTH AUSTRALIA SPECIMENS FROM 1956-1961

Year Ending	Poliovirus Type 1	Poliovirus Type 2	Poliovirus Type 3
31st December, 1956	3	2	18
31st December, 1957	3	—	4
31st December, 1958	—	—	—
31st December, 1959	1	—	—
31st December, 1960	15	—	—
31st December, 1961	1	—	35

Investigation and Determination of Cases.—Since the start of the Salk programme on 28th June, 1956, reports of suspected cases have been investigated, as far as possible, by the Principal Medical Officer (Poliomyelitis) and details have been sent to the Commonwealth Surveillance Committee which meets in Melbourne. The members of this specialist committee make the final decision on whether a case should be regarded as poliomyelitis or not, in assessing statistically the efficacy of the “Salk” vaccine. From 28th June, 1956, to 31st December, 1961, details of one hundred and seventy-nine (179) cases reported as suspected poliomyelitis were referred to the committee ; one hundred and twenty-two (122) of these cases were accepted as poliomyelitis.

Of the one hundred and twenty-two (122) poliomyelitis patients, eleven (11) only (all within the age group 0-14 years) had started a course of immunization injections. No case has occurred in South Australia in any person who has received all three “Salk” immunization injections.

Of the one hundred and eleven (111) cases of poliomyelitis in patients who had received no injections, fifty-nine (59) were children in the age group 0-14 years and fifty-two (52) were persons over 15 years of age.

This means that in South Australia between 28th June, 1956 and 31st December, 1961, there have been one hundred and eleven (111) accepted cases of poliomyelitis in NON-immunized persons ; eleven (11) cases in partly-immunized persons ; and none in persons who had completed a course of immunization. Table 18, shows the decisions, by the Surveillance Committee, on South Australian cases between 28th June, 1956 to 31st December, 1961.

(NOTE.—The Surveillance Committee figures are based on the date of onset of the illness, and not the date the case was reported.)

TABLE 18.—RESULTS OF CASES DETERMINED BY SURVEILLANCE COMMITTEE IN THE PERIOD 28TH JUNE, 1956, TO 31ST DECEMBER, 1961. (BASED ON DATE OF ONSET OF ILLNESS AND NOT DATE OF NOTIFICATION.)

Period	Total Cases Considered by Committee	Not Poliomyelitis		Poliomyelitis							
		0-14 Years	Over 15 Years	0-14 Years				Over 15 Years			
				No. of Injections Received				No. of Injections Received			
				0	1	2	3	0	1	2	3
Six months ending 31st December, 1956	58	7	3	26	3(a)	—	—	19	—	—	—
Year ending 31st December, 1957	33	9	6	3	1(b)	1(c)	—	13	—	—	—
Year ending 31st December, 1958	31	13	15	1	—	—	—	2	—	—	—
Year ending 31st December, 1959	3	1	—	2	—	—	—	—	—	—	—
Year ending 31st December, 1960	10	1	1	7	1(d)	—	—	—	—	—	—
Year ending 31st December, 1961	44	1	—	20	3(e)	2(f)	—	18	—	—	—
	179	32	25	59	8	3	—	52	—	—	—

NOTE.—1956 (a) These three patients, who were reported during the six months ending 31st December, 1956, developed poliomyelitis within a week of attending for their first injection ; all three had been sick prior to the injection. The investigations showed that each of these children was infected with poliomyelitis before the first injection was given and it could not be expected that the vaccine would prevent development of the disease in these circumstances. These three patients really should be regarded as NON-immunized subjects.

1957 (b) This child received one injection only. As no specimens for laboratory investigation were made available, it was not possible to confirm, or exclude, the diagnosis of poliomyelitis. It was decided to accept the case as poliomyelitis for statistical purposes.

1957 (c) This child of 6 years had received two injections. Again no specimens could be obtained and the diagnosis of poliomyelitis, whilst not proven, was accepted.

1960 (d) This three year old girl received one injection a year before her illness and had not attended for her second and third injections when they were due.

1961 (e) These three children, aged 1·3 years, 2·8 years and 2·8 years, who contracted poliomyelitis in 1961, had each received one injection only ; this first injection was received seven months, 12 months, and 16 months respectively before the illness.

1961 (f) These children aged 9 months, and 9 years, also contracted poliomyelitis in 1961 before completing their immunization. The 9 months old child received a first injection two months, and a second injection one month, before her illness ; the 9 years old child received a first injection 21 months, and a second injection 18 months, before his illness.

Poliomyelitis Immunization Injections.—The number of Salk injections given from the start of the programme on the 28th June, 1956, to 31st December, 1961, appears in Table 19.

TABLE 19.—INJECTIONS GIVEN SINCE CAMPAIGN STARTED

28th June-31st December, 1956	223,979
1st January-31st December, 1957	401,683
1st January-31st December, 1958	226,164
1st January-31st December, 1959	306,463
1st January-31st December, 1960	156,165
1st January-31st December, 1961	33,263
	1,387,717

NOTE.—(a) The small number of injections given in the year ending 31st December, 1961, resulted from poliomyelitis vaccine not being available during most of the year—due to a prolonged production breakdown in the Commonwealth Serum Laboratories, Melbourne.

(b) Of the 33,263 injections in 1961, 25,089 were given by the Poliomyelitis Services ; and 8,174 were given by other agencies, such as Local Boards of Health, Hospitals, and the Flying Doctor Service.

(c) The breakdown of this total number of 1,387,717 poliomyelitis injections into first, second, and third injections, and in age groups is shown in Table 20.

TABLE 20.—SEPARATION OF FIRST, SECOND AND THIRD POLIOMYELITIS INJECTIONS GIVEN FROM 28TH JUNE, 1956, TO 31ST DECEMBER, 1961. NOTE.—THIS TABLE DOES NOT INCLUDE QUADRUPLE ANTIGEN INJECTIONS

	0-14 Years	Over 15 Years	Total
First injections	297,198	199,214	491,412
Second injections	286,240	184,807	471,047
Third injections	265,366	154,892	420,258
	848,804	538,913	1,387,717

A smaller percentage of the eligible adult population start the course of injections compared with the younger group. A greater percentage of this older group fail to complete the course once it is started.

With the progressively increasing number of persons being immunized, it is obvious that the level of demand for poliomyelitis immunization injections must fall. Ideally, it would be hoped that in time enough people would be immunized so that the current demand would settle to a figure approximating the number of new births, plus child and adult immigration into South Australia ; this “maintenance” level has not yet been reached.

Analysis of the injections given in the year ending 31st December, 1961, would not give a valid representation of the age group response, because :—

- (1) The lack of vaccine supplies during 1961 resulted in a low number of injections being given, and
- (2) There was a restriction on eligibility for part of the immunization period.

The following table (Table 21) has been prepared to show the position to 31st December, 1960 : this permits discussion of the age group response trends over four and one-half years of immunization while vaccine was freely available. Table 21 showing injections given each quarter in age groups (up to 31st December, 1960), reveals the following :—a continuing steady demand for “pre-school” children ; a low recent response from school children ; and the falling demand from the “over 15 years” group. These points are discussed below the table.

TABLE 21.—POLIOMYELITIS IMMUNIZATION INJECTIONS GIVEN EACH QUARTER—IN AGE GROUPS—FROM 28TH JUNE, 1956, TO 31ST DECEMBER, 1960

Showing continuing demand in “Pre-school” group, low response in “school age” group, and falling off in numbers in the “Over 15 years” group up to 31st December, 1960. (In 1961, the number of injections given was determined by the amount of vaccine available so these have been shown in a separate table.)

Quarter Ending—	Pre-school Age	School Age	Over 15 Years	Total
30th September, 1956.....	19,837	74,726	2,442	97,005
31st December, 1956	38,552	86,223	2,199	126,974
31st March, 1957	39,464	54,595	3,106	97,165
30th June, 1957.....	23,350	85,287	3,308	111,945
30th September, 1957.....	25,553	56,898	5,423	87,874
31st December, 1957	40,276	55,534	8,889	104,699
31st March, 1958	10,460	12,474	10,544	33,478
30th June, 1958.....	16,455	19,316	35,893	71,664
30th September, 1958	15,553	3,505	51,095	71,153
31st December, 1958	16,135	3,482	70,252	89,869
31st March, 1959	12,719	2,596	56,384	71,699
30th June, 1959.....	15,698	3,419	72,975	92,192
30th September, 1959.....	16,979	2,511	62,743	82,233
31st December, 1959	15,086	1,979	43,274	60,339
31st March, 1960	14,470	1,962	36,735	53,167
30th June, 1960.....	15,086	1,871	30,980	47,937
30th September, 1960	13,294	1,686	17,923	32,903
31st December, 1960	8,845	1,089	12,224	22,158

The continuing steady demand in the “pre-school” group could be explained by children applying for immunization as they reach the starting age of six months.

The low numbers in the school age groups since 1958, is unlikely to be due to lack of response ; on the contrary, it is more likely to arise from the high immunization rate achieved in both school and pre-school age groups previously. As a high proportion of these children were immunized earlier, there should be a small number only who would still be eligible. A high level of immunization in the school age group should continue as long as a good response is obtained in the “pre-school” group ; as the children immunized at pre-school age enter the school age group, it means less school children requiring immunization.

The falling off in response from adults, up to 31st December, 1960, was thought to be due in part, at least, to such persisting ideas as “poliomyelitis is a disease of children.” In the last annual report it was recorded that ; “if future cases occur in adults (as is likely) there will be a rush for immunization as has occurred before in this State.” This was borne out this year (1961) when there was an acute, unprecedented shortage of vaccine, and three NON-immunized adult patients died of poliomyelitis. The demand from adults for injections reached panic proportions and led to long queues at the Department’s mobile unit—to the extent where available vaccine supplies were exhausted in one week.

Up to 31st December, 1960, all poliomyelitis immunization injections were given by the Poliomyelitis Services Staff. During late 1961, poliomyelitis vaccine was made available for the first time to other authorities—such as Local Boards of Health. Table 22 shows the poliomyelitis immunization injections given during 1961. It shows applicants' years of birth : first, second and third injections : and it separates the number of injections given by Poliomyelitis Services staff from other agencies.

TABLE 22.—POLIOMYELITIS IMMUNIZATION INJECTIONS GIVEN IN THE YEAR ENDING 31st DECEMBER, 1961, BY VARIOUS AGENCIES—IN APPLICANTS' YEARS OF BIRTH AND IN FIRST, SECOND AND THIRD INJECTIONS

(NOTE.—This table does not include Quadruple Antigen Injections.)

Year of Birth	Poliomyelitis Services				Local Boards of Health				Hospitals and Other Authorities				Total			
	1st	2nd	3rd	Total	1st	2nd	3rd	Total	1st	2nd	3rd	Total	1st	2nd	3rd	Total
1962.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1961.....	718	436	13	1,167	1,115	75	26	1,216	—	—	—	—	1,833	511	39	2,383
1960.....	3,132	2,288	876	6,296	1,985	193	209	2,387	17	49	1	67	5,134	2,530	1,086	8,750
1959.....	569	599	3,564	4,732	366	170	1,267	1,803	17	54	4	75	952	823	4,835	6,610
1958.....	132	129	911	1,172	46	57	403	506	1	12	3	16	179	198	1,317	1,694
1957.....	64	58	320	442	27	22	140	189	3	6	1	10	94	86	461	641
1956.....	62	43	197	302	6	6	49	61	2	6	1	9	70	55	247	372
1955.....	48	28	123	199	1	5	29	35	—	2	2	4	49	35	154	238
1954.....	44	38	125	207	2	5	25	32	—	—	—	—	46	43	150	239
1953.....	44	38	109	191	2	6	26	34	—	—	—	—	46	44	135	225
1952.....	46	25	105	176	5	6	9	20	—	—	—	—	51	31	114	196
1951.....	29	23	61	113	1	4	6	11	—	2	1	3	30	29	68	127
1950.....	21	16	47	84	1	1	13	15	—	—	1	1	22	17	61	100
1949.....	13	5	30	48	2	1	12	15	—	2	1	3	15	8	43	66
1948.....	19	8	18	45	1	1	7	9	—	—	1	1	20	9	26	55
1947.....	10	3	19	32	—	1	10	11	—	—	—	—	10	4	29	43
1946.....	12	7	14	33	—	—	2	2	—	—	—	—	12	7	16	35
1945.....	13	6	14	33	—	1	6	7	—	—	—	—	13	7	20	40
1944.....	20	4	17	41	2	1	6	9	1	—	—	1	23	5	23	51
1943.....	25	15	10	50	3	1	4	8	3	—	—	3	31	16	14	61
1942.....	44	30	62	136	2	2	5	9	5	2	7	14	51	34	74	159
1941.....	106	52	145	303	4	1	27	32	11	10	4	25	121	63	176	360
1940.....	116	73	148	337	4	5	35	44	11	7	2	20	131	85	185	401
1939.....	120	77	145	342	11	4	47	62	7	9	3	19	138	90	195	423
1938.....	110	89	191	390	14	4	52	70	1	3	—	4	125	96	243	464
1937.....	120	74	215	409	10	7	60	77	—	7	2	9	130	88	277	495
1936.....	110	84	261	455	4	11	57	72	13	7	—	20	127	102	318	547
1935.....	120	82	260	462	8	6	56	70	5	6	4	15	133	94	320	547
1934.....	108	74	234	416	3	10	52	65	11	15	—	26	122	99	286	507
1933.....	103	91	254	448	2	7	49	58	7	3	7	17	112	101	310	523
1932.....	90	71	230	391	5	4	60	69	—	7	—	7	95	82	290	467
1931.....	102	79	214	395	3	12	35	50	5	4	7	16	110	95	256	461
1930.....	110	81	237	428	3	8	61	72	3	3	—	6	116	92	298	506
1929.....	100	74	215	389	1	4	35	40	—	4	2	6	101	82	252	435
1928.....	116	83	245	444	2	9	38	49	3	2	—	5	121	94	283	498
1927.....	84	67	208	359	—	1	47	48	—	2	2	4	84	70	257	411
1926.....	93	74	214	381	2	6	30	38	7	6	4	17	102	86	248	436
1925.....	78	64	186	328	2	2	40	44	5	4	2	11	85	70	228	383
1924.....	99	68	213	380	3	4	45	52	5	2	—	7	107	74	258	439
1923.....	82	72	175	329	3	8	35	46	5	2	2	9	90	82	212	384
1922.....	53	53	180	286	—	6	36	42	5	1	—	6	58	60	216	334
1921.....	75	52	130	257	—	1	28	29	3	—	—	3	78	53	158	289
1920.....	68	58	129	255	—	3	33	36	—	2	—	2	68	63	162	293
1919.....	60	40	109	209	—	2	23	25	—	—	2	2	60	42	134	236
1918.....	40	36	85	161	2	5	19	26	9	2	—	11	51	43	104	198
1917.....	30	26	90	146	1	1	18	20	3	—	—	3	34	27	108	169
1916.....	32	28	58	118	—	1	13	14	3	2	—	5	35	31	71	137
1915.....	32	24	51	107	—	—	10	10	—	—	—	—	32	24	61	117
1914.....	25	21	36	82	1	2	5	8	4	2	2	8	30	25	43	98
1913.....	30	22	22	74	2	—	3	5	—	—	—	—	32	22	25	79
1912.....	35	26	16	77	—	2	3	5	—	—	—	—	35	28	19	82
1911.....	30	22	26	78	1	1	2	4	—	—	—	—	31	23	28	82
1910.....	164	114	76	354	3	3	7	13	10	—	—	10	177	117	83	377
	7,706	5,750	11,633	25,089	3,661	698	3,315	7,674	185	247	68	500	11,552	6,695	15,016	33,263

It will be seen from the above table, that 7,674 injections were given by Local Boards of Health : Table 23 which follows, shows the number of injections given by the individual Boards participating. Only one immunization session was conducted by each of these Boards because of the restricted amount of vaccine available—the session being held either in November or December, 1961.

TABLE 23.—POLIOMYELITIS VACCINE IMMUNIZATION INJECTIONS GIVEN DURING NOVEMBER OR DECEMBER, 1961, BY THE INDIVIDUAL LOCAL BOARDS OF HEALTH

(This table does not include Quadruple Antigen Injections.)

Name of Local Board of Health—Metropolitan—	Number of Injections Given
Nil	Nil
Total injections—Metropolitan	Nil

Name of Local Board of Health—Country—	
Angaston	148
Barmera	147
Berri	195
Blyth.....	23
Carrieton	14
East Torrens (Norton Summit)	18
Franklin Harbour	52
Hawker	32
Kadina Town.....	134
Kapunda District	83
Kimba.....	94
Kingscote	100
Lameroo	108
Lincoln	74
Loxton	316
Maitland	25
Mallala	26
Millicent	225
Minlaton	194
Moonta	19
Morgan	41
Mount Gambier Town	632
Mudla Wirra	30
Munno Para	38
Murat Bay	33
Murray Bridge	299
Naracoorte Town	326
Orroroo	46
Penola	139
Pinnaroo	87
Port Augusta	549
Port Germein	23
Port Lincoln	317
Port Pirie	507
Port Wakefield	19
Quorn	48
Redhill	32
Renmark Town	323
Riverton	42
Saddleworth	45
Salisbury	540
Stirling	83
Tanunda	94
Tatiara	363
Tea Tree Gully	116
Upper Wakefield	27
Waikerie	105
Wallaroo	45
Warooka	51
Whyalla Town Commission	438
Wilmington	25
Yorke Peninsula	62
Yorketown	122
Total injections—Country	7,674
Total number of injections by all 53 Boards participating as at 31st December, 1961.....	7,674

The next table shows the wastage rate in poliomyelitis vaccine issued to Local Boards of Health. The overall low wastage rate—amounting to 2 per cent only—was very pleasing, particularly as vaccine was in short supply during this period.

TABLE 24.—SHOWING AMOUNT OF POLIOMYELITIS VACCINE ISSUED, AMOUNT USED, AND AMOUNT WASTED BY COUNTRY AND METROPOLITAN LOCAL BOARDS OF HEALTH

	Doses Issued	Injections Given	Doses Wasted	Per Cent	Total
Country Local Boards of Health	7,836	7,674	162	2	7,836
Metropolitan Local Boards of Health	—	—	—	—	—
	7,836	7,674	162	2	7,836

NOTE.—No metropolitan Local Boards of Health had started poliomyelitis immunization by 31st December, 1961 ; the participating metropolitan Local Boards having planned their first campaign for early 1962.

Quadruple Antigen.—During 1961, limited supplies of quadruple antigen (containing whooping cough-diphtheria-tetanus and poliomyelitis components) were received. Arrangements were made for the quadruple antigen received to be issued to those Local Boards of Health and private medical practitioners who desired it : who had available a refrigerator for the sole storage of sera, vaccines and other biologicals : and who undertook to supply the Department with records of each injection given.

Local Boards of Health were asked particularly to arrange regular, free, immunization sessions as future immunity status in the community may be determined largely by the extent of Local Board participation.

Where quadruple antigen was used by a private medical practitioner for private patients, no charge was made for the vaccine, but the practitioner charged the usual private practice fee for the injection.

Table 25 shows the number of quadruple antigen injections given (by the various agencies) in applicants' years of birth, and in first, second and third injections.

TABLE 25.—QUADRUPLE ANTIGEN INJECTIONS GIVEN DURING 1961 BY VARIOUS AGENCIES—IN APPLICANTS' YEARS OF BIRTH, AND IN FIRST, SECOND AND THIRD INJECTIONS

Born	Local Boards of Health					Hospitals and other Authorities					Private Doctors					Total				
	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total
Jan.-Mar., 1961	215	117	24	1	357	7	3	1	—	11	732	369	78	1	1,180	954	489	103	2	1,548
April-June, 1961	2	—	1	—	3	—	—	—	—	—	4	3	4	—	11	6	3	5	—	14
July-Sept., 1961	—	—	2	—	2	—	—	—	—	—	—	—	4	—	4	—	—	6	—	6
Oct.-Dec., 1961	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Jan.-Mar., 1960	83	78	49	—	210	2	2	2	—	6	220	158	96	—	474	305	238	147	—	690
April-June, 1960	146	132	96	—	374	5	2	3	—	10	414	324	257	1	996	565	458	356	1	1,380
July-Sept., 1960	356	340	271	1	968	18	15	15	—	48	1,123	997	845	3	2,968	1,497	1,352	1,131	4	3,984
Oct.-Dec., 1960	554	470	315	—	1,339	28	25	20	—	73	2,057	1,818	1,273	5	5,153	2,639	2,313	1,608	5	6,565
1959.....	102	72	52	—	226	7	5	7	—	19	400	178	118	1	697	509	255	177	1	942
1958.....	12	8	3	—	23	—	—	—	—	—	52	14	11	—	77	64	22	14	—	100
1957.....	—	1	—	—	1	—	—	—	—	—	10	4	1	—	15	10	5	1	—	16
1956.....	1	—	—	—	1	—	—	—	—	—	21	3	—	—	24	22	3	—	—	25
1955.....	—	—	—	—	—	—	—	—	—	—	5	2	1	—	8	5	2	1	—	8
1954.....	—	—	—	—	—	—	—	—	—	—	8	2	—	—	10	8	2	—	—	10
1953.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Nil
1952.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Nil
1951.....	—	—	—	—	—	—	—	—	—	—	2	—	—	—	2	2	—	—	—	2
1950.....	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	1	—	—	—	1
1949.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Nil
1948.....	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	1	—	—	—	1
	1,471	1,218	814	2	3,505	67	52	48	—	167	5,050	3,872	2,688	11	11,621	6,588	5,142	3,550	13	15,293

The above table reflects the fact that the simultaneous issue of quadruple antigen to private doctors as well as Local Boards of Health resulted in most injections being given by private doctors. The figures were 11,621 quadruple antigen injections given by private doctors and 3,505 given by Local Boards. In many areas the Local Boards of Health took the view that as injections were available to residents as private paying patients, there was no need for the Board to provide separate facilities.

The number of quadruple antigen injections given by each individual Board participating is shown in Table 26 hereunder.

TABLE 26.—QUADRUPLE ANTIGEN IMMUNIZATION INJECTIONS GIVEN (DURING THE EARLY PART OF 1961 WHEN VACCINE WAS AVAILABLE) BY THE INDIVIDUAL LOCAL BOARDS OF HEALTH PARTICIPATING

Name of Local Board of Health—Metropolitan—	Number of Injections Given
Brighton	16
East Torrens	384
Marion	213
Port Adelaide	221
Prospect	223
Thebarton	13
Unley	340
West Torrens	174
Woodville	389
Total injections—Metropolitan	1,973

Name of Local Board of Health—Country—	Number of Injections Given
Balaklava	65
Barmera	36
Berri	69
Blyth.....	23
Carrieton	2
Cleve	61
Elliston	40
Franklin Harbour	5
Hawker	8
Kadina Town.....	23
Kapunda District	14
Kimba.....	27
Lameroo	27
Lincoln	30
Loxton	77
Murat Bay	75
Murray Bridge	93
Naracoorte Town	126
Orroroo	50
Penola	82
Port Lincoln	259
Port Pirie	137
Port Wakefield	2
Riverton	25
Salisbury	113
Streaky Bay.....	3
Tanunda	18
Upper Wakefield	12
Warooka	30
Total injections—Country	1,532
Total number of injections by all 38 Boards partici- pating	3,505

It will be noted from Table 26 that only thirty-eight (38) Local Boards of Health participated in the scheme to provide free immunization facilities with quadruple antigen. One reason is given for this small number in the discussion below Table 25. When poliomyelitis vaccine became available in limited amounts in late 1961, its use had to be restricted to free immunization by the Department’s mobile units, and by Local Boards of Health. As polio-myelitis vaccine was not available to private doctors, there was more incentive for Local Boards of Health to provide immunization facilities and the number of participating Boards grew quickly from thirty-eight (38) to fifty-three (53). By the end of the year 1961 many inquiries were also being received from other Boards regarding future participation.

TABLE 27.—SHOWING AMOUNT OF QUADRUPLE ANTIGEN ISSUED, AMOUNT USED, AND AMOUNT WASTED BY COUNTRY AND METROPOLITAN LOCAL BOARDS OF HEALTH RESPECTIVELY : AND BY COUNTRY AND METROPOLITAN PRIVATE PRACTITIONERS RESPECTIVELY

	Doses Issued	Injections Given	Doses Wasted	Per Cent	Total
Country Local Boards of Health	1,748	1,532	216	12	1,748
Metropolitan Local Boards of Health	2,351	1,973	378	16	2,351
Country Doctors.....	4,614	4,335	279	6	4,614
Metropolitan Doctors	9,011	7,286	1,725	19	9,011
	17,724	15,126	2,598	14	17,724

It is interesting to compare the country Local Boards of Health wastage rate of quadruple antigen, shown above, with the wastage rate of poliomyelitis vaccine, shown in Table 24 ; the quadruple antigen wastage rate being 12 per cent against the poliomyelitis vaccine wastage rate of only 2 per cent. As no metropolitan Local Board of Health had started giving poliomyelitis immunization injections by 31st December, 1961, only country Local Boards of Health figures are available for comparison of quadruple antigen wastage with poliomyelitis vaccine wastage.

It is not possible to be certain of the explanations for the quadruple antigen wastage rate (12 per cent) being six times higher than the poliomyelitis vaccine wastage rate (2 per cent) as both were allocated on the same basis. Some suggestions for the difference are :—

- (a) Poliomyelitis vaccine was issued later in the year than was quadruple antigen. It is possible that some Local Board Officers benefited from their previous experience with quadruple antigen when carrying out the poliomyelitis vaccine immunization later.
- (b) The issue of quadruple antigen by the Department was supervised by a clerical officer. The issue of poliomyelitis vaccine by the Department was supervised closely by a medical officer. The Departmental medical officer doubtless was in a more knowledgeable and authoritative position to discuss with Local Board Officers all occasions where wastage on any issue of poliomyelitis vaccine appeared high. These discussions would canvass numerous aspects : such as over-ordering, possible losses in drawing up vaccine, size of syringes used, and methods of changing needles, etc. The Local Board Officers concerned appeared to welcome these discussions as offering help and guidance and not as criticism. There were frequent occasions when Officers of Local Boards volunteered the statement that they were greatly assisted by having a Departmental medical officer always available for telephone advice on any aspects of immunization, whether administrative or medical.

(c) Even Local Board of Health Officers who initially were interested in the quadruple antigen campaign appeared more interested and enthusiastic about the poliomyelitis immunization programme. Department officers gained a marked impression that there was more interest and activity regarding poliomyelitis immunization which involved all age groups, compared with quadruple antigen immunization where the use was restricted to children under two years. This increased interest possibly led to Local Board Officers becoming concerned about the details of their campaigns ; this may have resulted in more reliable ordering and in efforts to ensure that people attended for their appointments.

(d) Although there was no assurance of future quadruple antigen supplies, some Local Board of Health Officers may have felt that it would be available always—as triple antigen had been in the past. This may not have led to carelessness in usage, but to a lack of positive steps to reduce wastage to an absolute minimum. When poliomyelitis vaccine was made available later, the acute scarcity of the vaccine was recognized by Local Board of Health Officers and their vigorous efforts to conserve every dose possible was a big factor in the gratifyingly low wastage rate.

From Table 27 it is possible to compare the wastage rates between the four groups using quadruple antigen. It will be noted that the country Local Board of Health wastage rate of 12 per cent was lower than the metropolitan Local Board wastage rate of 16 per cent. This difference is not great and could have arisen by chance. In each of the country Local Board and metropolitan Board groups there were some Boards with a constantly negligible wastage rate, and others with a regularly high one. (Because a medical officer was available when poliomyelitis vaccine was issued, it was possible for him to concentrate on discussions with those Boards who had shown a regularly high wastage rate earlier, and in most of these areas, the rate was reduced.)

The big difference in wastage rates in quadruple antigen usage was between country private doctors (6 per cent) and metropolitan private doctors (19 per cent). This was noticeable in part throughout the time of issue of quadruple antigen and at least one reason for the difference is known. This difference was not considered to be due wholly to a lower default rate in country parents, compared with metropolitan parents, making appointments for children and not keeping them. Partly, this may have been so. A country parent making an appointment with the local doctor was faced with : keeping the appointment, notifying the doctor, having to face him later as a defaulter or foregoing the child's injection. A metropolitan parent who defaulted in keeping the child's appointment was able to seek immunization from a different doctor in the area. In practice, however, it is doubtful whether many parents made specific appointments with a private doctor and failed to take the children along. The one known reason for the lower wastage rate of country private doctors (6 per cent) compared with metropolitan private doctors (19 per cent) was the method of ordering. Generally speaking, country doctors meticulously observed the request to order for known patients only. On the other hand, there were some metropolitan doctors who made no attempt to give appointments for injections and to order for known patients only ; on many occasions, these doctors returned (as outside the expiry period) far more doses than they used. The outcome was :—

(a) Most metropolitan doctors would waste only one dose occasionally, due to non-attendance of a “booked” patient ; often these doctors would send for another known applicant to avoid wasting even that one dose. The co-operation and care exercised by these doctors was greatly appreciated by the Department.

(b) A few metropolitan doctors invariably wasted more vaccine than they used. This minority would average 50 per cent wastage rate, compared with other doctors whose wastage rate was nil.

(c) The resulting overall wastage rate of all metropolitan private doctors was more than three times that of country private doctors.

The issue of vaccines by the Department to private doctors went smoothly. Records of injections given were returned to the Department as requested and warm co-operation was received from doctors, their trained nurses, and their receptionists.

The issue of vaccines to the Local Boards of Health brought a close relationship between the Officers of some Boards and the Department's staff. The interest and activity of the Officers of the separate participating Boards is gratefully acknowledged.

The Future Work.—The number of poliomyelitis immunization injections given by the Poliomyelitis Services Staff is becoming progressively less and has allowed a reduction of the work and driver orderly staff of the mobile units giving injections. On the other hand the medical, clerical, typing, and recording work of the branch has increased and will increase by the following functions :—

(a) Trying to arrange adequate local facilities for immunization in those areas where Local Boards are not participating and encouraging the continuance of existing regular campaigns.

(b) Controlling and issuing the supplies of any vaccines containing a poliomyelitis component—to safeguard the potency of the vaccine and the preservation of records. This work is increasing as more Local Boards decide to participate.

(c) Maintaining the existing important central register by continuing to record each poliomyelitis injection received by any person in South Australia (information for this will be obtained from records returned by Local Boards and private doctors).

(d) Carrying out publicity regarding poliomyelitis immunization ; directing this to Local Boards of Health, private medical practitioners and the public.

- (e) The work of the medical staff (other than giving injections) has already increased considerably in the inquiries from Local Board Officers on all aspects of immunization. This will increase further when poliomyelitis vaccine is released to private doctors.
- (f) Investigation of reported suspected cases of poliomyelitis in both vaccinated and unvaccinated subjects, and providing a clinical diagnostic consultant service to private medical practitioners who request it.
- (g) Continuing the medical rehabilitation work with post poliomyelitis patients of past epidemics and with other certain selected cases of chronically handicapped people.
- (h) Assessing and advising, as at present, on the most suitable day, educational or institutional placement for cerebral palsied and other handicapped children and others referred to the Branch by medical practitioners.

Summary.—During the year ended 31st December, 1961, the poliomyelitis immunization campaign was held up by the shortage of vaccine, but the work load was increased by the number of cases of poliomyelitis to be investigated : the prolonged and detailed negotiations with Local Boards of Health regarding the provision of free local facilities : and the packing, issuing, delivery, and recording of quadruple antigen for Local Boards of Health and private medical practitioners.

When further supplies of poliomyelitis vaccine arrived late in the year, the branch resumed the working of a Departmental mobile unit, giving free immunization injections in the metropolitan area. There is now an increased strain on the staffing resources in the regular issuing of poliomyelitis vaccine to the fifty-three (53) Local Boards of Health who are providing free facilities not less than monthly for their residents ; the number of participating Local Boards of Health is expected to rise rapidly next year. When adequate and regular supplies of poliomyelitis vaccine are assured, there will also be the increased work of issuing it to private medical practitioners.

5. TUBERCULOSIS BRANCH

The number of new notifications of tuberculosis decreased to 214 this year, from a total 288 in 1960. Pulmonary disease was 84·5 per cent of the new cases. There were a further 16 cases found from Death Certificates.

Source of Notification, 1961—

Mass Community Surveys	72
Private Practitioner	18
Chest Clinic	18
Chest Hospitals	83
General Hospitals	20
Repatriation Department	3
Death Certificate	16

The following table shows the Local Board of Health origin of new notifications for 1961 :—

TABLE 28.—PULMONARY TUBERCULOSIS

METROPOLITAN		COUNTRY	
Local Board Area—	Notifications	Local Board Area—	Notifications
Adelaide	15	Angaston	2
Brighton	2	Beachport	1
Colonel Light Gardens	3	Burra	1
East Torrens County Board	19	Clare Town.....	1
Enfield	12	Crystal Brook	1
Glenelg.....	2	Franklin Harbour	1
Henley and Grange	2	Gawler	1
Hindmarsh	4	Loxton	2
Marion	12	Mannahill out-district.....	1
Mitcham	7	Minnipa	1
Port Adelaide	19	Mount Gambier Town	2
Prospect	4	Munno Para	1
Thebarton	6	Millicent	1
Unley	17	Naracoorte	2
West Torrens	9	Noarlunga	1
Woodville	11	Penola	2
		Pinnaroo	2
		Port Pirie	1
		Port Augusta	1
		Streaky Bay.....	1
		Salisbury	1
		Tatiara	1
		Woomera out-district	3
		Wilmington	1
		Yorke Peninsula	1
	144		33

NON-PULMONARY TUBERCULOSIS

METROPOLITAN		COUNTRY	
Local Board Area—	Notifications	Local Board Area—	Notifications
Adelaide	6	Clare Town.....	1
East Torrens County Board	8	Mount Pleasant	1
Enfield	3	Port Augusta	1
Hindmarsh	1	Tea Tree Gully	1
Marion	1		
Mitcham	1		
Port Adelaide	2		
Prospect	4		
Thebarton	2		
West Torrens	3		
Woodville	2		
	33		4

Migrants.—There were 21 notifications of tuberculosis in migrants who have been in Australia less than five years. The following table shows the country of origin.

TABLE 29

Country	Notifications
Austria	1
England	2
Germany.....	1
Greece	3
Hungary	1
Italy	3
Pakistan	1
Rumania.....	1
Russia	1
Scotland	1
Singapore	1
Spain	1
Yugoslavia	4
	21

Mortality.—There were 46 deaths from pulmonary tuberculosis and three from tuberculosis of other forms. Deaths attributed to tuberculosis have decreased over the past four years as indicated by the following figures :—

1958	6·66 deaths per 100,000
1959	5·43 deaths per 100,000
1960	4·02 deaths per 100,000
1961	5·05 deaths per 100,000

The age and sex distribution of those having died of tuberculosis is shown in the following table :—

TABLE 30.—PULMONARY TUBERCULOSIS

Age at Death	Male	Female	Total
15-24 years	—	—	—
25-34 years	1	—	1
35-44 years	5	2	7
45-54 years	4	1	5
55-64 years	4	—	4
65-74 years	10	1	11
75 and over	11	7	18
	35	11	46

NON-PULMONARY TUBERCULOSIS

Age at Death	Male	Female	Total
35-44 years	2	—	2
65-74 years	—	1	1
	2	1	3

Tuberculosis Allowance.—There was a further and considerable decrease in the numbers receiving tuberculosis allowance. One hundred and seventy-one persons were receiving the benefit at 31st December, 1961, compared to 215 at 31st December, 1960.

Mass Community X-ray Surveys.—During 1961, a total of 137,424 persons were examined. One hundred and eleven thousand, eight hundred and forty in the metropolitan area and 25,584 in the country. Seventy-two new notifications resulted directly from survey examinations.

TABLE 31.—NEW CASES NOTIFIED IN 1961 FROM X-RAY SURVEYS

Age Group (Years)	Male	Female	Total
10-14.....	—	—	—
15-19.....	—	1	1
20-24.....	1	4	5
25-29.....	4	2	6
30-34.....	—	6	6
35-39.....	4	1	5
40-44.....	5	4	9
45-49.....	5	3	8
50-54.....	7	1	8
55-59.....	4	2	6
60-64.....	6	—	6
65-69.....	2	2	4
70-74.....	3	—	3
75 and over	—	5	5
Total	41	31	72

The notifications in 1961 from X-ray surveys were as follows :—

Metropolitan (Includes Special Surveys)	Country	Total
55	17	72

Table 32 shows the results of mass community surveys in 1961.

Special X-ray Surveys.—An X-ray survey of the inmates of the Parkside Mental Hospital was made in 1961. Table 33 shows the results of this survey.

The static miniature X-ray unit in Austin Street examined a total of 22,934 during 1961. Table 34 shows results from this unit and the number of persons examined split into the various categories and the number of cases notified per 1,000.

Tuberculin Testing and B.C.G. Vaccination.—Table 36 shows details of tuberculin testing and B.C.G. vaccination conducted in the schools and Table 37 shows the details of the same work carried out in the Chest Clinic. It will be observed that the natural positive rate in metropolitan Grade VII school children has fallen to 3 per cent as against 3·8 per cent in 1960. Table 38 gives a six months sample of the Mantoux conversion rate after B.C.G.

Chest Clinic Attendances.—The Chest Clinic officially joined this Department on 1st May, 1961. Statistical information was prepared for the Hospitals Department for the year ending 30th June, 1961. To conform to the procedure in our Department of statistical information for the calendar instead of the financial year, (this also meets the Commonwealth requirements), the information is for the six months ending 31st December, 1961 and will be provided for a whole year in future. Table 39 shows the various categories and total of Chest Clinic attendances.

The taking of X-rays for chest clinic patients commenced by this Department in Ruthven Mansions on 1st May, 1961. From 1st May, 1961 to 31st December, 1961, a total of 9,292 persons had routine chest X-ray examinations. Certain persons had additional X-ray examinations as follows :—

Tomography	103
Sinus	42
Spine.....	15
Hip and pelvis	3
Barium Meal	6
Ankle	1
Shoulder	3
Feet	2
Hand and wrist.....	5
Ribs	2
Abdomen	4
Knee	1
Skull	6

In the period 1st May, 1961 to 31st December, 1961, there were 180 new patients registered with the Chest Clinic Almoner and 131 old patients re-registered.

TABLE 32.—MASS COMMUNITY X-RAY SURVEYS, 1961—SOUTH AUSTRALIA

Age Group (Years)	METROPOLITAN						COUNTRY						Grand Total
	Active T.B.	Suspect Active T.B.	Inactive T.B.	Non-T.B.	Normal	Total	Active T.B.	Suspect Active T.B.	Inactive T.B.	Non-T.B.	Normal	Total	
10-14....	—	—	1	1	53	55	—	2	1	1	44	48	103
15-19....	—	8	11	16	9,559	9,594	—	6	3	6	2,909	2,024	12,518
20-24....	1	3	16	8	6,345	6,363	—	3	10	5	2,844	2,862	9,235
25-29....	2	10	22	16	6,070	6,120	2	2	7	6	2,784	2,801	8,921
30-34....	3	16	51	21	7,921	8,012	—	5	32	12	3,039	3,088	11,100
35-39....	2	20	87	19	9,500	9,628	2	8	36	11	3,042	3,099	12,727
40-44....	3	19	110	38	9,047	9,217	2	3	30	8	2,485	2,528	11,745
45-49....	3	25	166	50	8,793	9,037	—	10	30	20	2,376	2,436	11,473
50-54....	2	31	217	69	7,540	7,859	2	11	37	23	1,682	1,755	9,614
55-59....	2	32	189	74	6,249	6,546	1	10	21	11	1,270	1,313	7,859
60-64....	—	30	183	83	5,583	5,879	—	2	28	11	878	919	6,798
65-69....	2	43	189	105	5,011	5,350	—	5	8	15	652	680	6,030
70-74....	—	35	133	98	4,021	4,287	—	6	12	16	548	582	4,869
75 and over ..	2	45	125	91	3,829	4,092	—	8	8	14	519	549	4,641
Totals ..	22	317	1,500	689	89,521	92,049	9	81	263	159	24,072	25,584	117,633

NOTIFIED AS ACTIVE TUBERCULOSIS IN 1961, BUT FROM PREVIOUS YEARS SURVEYS

Age Group (Years)	Metro-politan	Country	Total
15-19	1	—	1
20-24	2	—	2
25-29	—	—	—
30-34	1	2	3
35-39	—	—	—
40-44	1	1	2
45-49	1	1	2
50-54	2	1	3
55-59	2	—	2
60-64	2	2	4
65-69	—	1	1
70-74	1	—	1
75 and over	3	—	3
Totals	16	8	24

TABLE 33.—PARKSIDE MENTAL HOSPITAL SURVEY, 1961—SOUTH AUSTRALIA

Age Group (Years)	Active T.B.	Suspect Active T.B.	Inactive T.B.	Normal	Total
10-14	—	—	—	37	37
15-19	—	—	—	48	48
20-24	—	—	—	44	44
25-29	—	—	1	53	54
30-34	—	—	1	100	101
35-39	1	1	4	116	122
40-44	—	1	7	140	148
45-49	—	5	8	166	179
50-54	—	3	7	151	161
55-59	—	3	9	116	128
60-64	—	1	9	119	129
65-69	—	3	4	97	104
70-74	—	2	5	85	92
75 and over	—	1	3	125	129
Totals	1	20	58	1,397	1,476

TABLE 34.—CITY STATIC X-RAY UNIT EXAMINATIONS, 1961—SOUTH AUSTRALIA

Age Group (Years)	Active T.B.	Suspect Active T.B.	Inactive T.B.	Non-T.B.	Normal	Total
0-4	—	—	—	5	28	33
5-9	—	1	2	3	177	183
10-14	—	5	11	2	551	569
15-19	—	9	25	17	4,758	4,809
20-24	2	6	23	10	2,073	2,114
25-29	2	4	39	5	1,664	1,714
30-34	—	11	85	6	1,733	1,835
35-39	—	13	136	10	1,796	1,955
40-44	3	10	163	10	1,312	1,498
45-49	2	11	143	10	944	1,110
50-54	1	10	125	16	573	725
55-59	1	6	148	7	379	541
60-64	2	9	137	7	263	418
65-69	1	13	126	8	184	332
70-74	2	6	85	6	100	199
75 and over	—	11	85	8	176	280
Totals	16	125	1,333	130	16,711	18,315

*F

TABLE 35.—CITY X-RAY UNIT EXAMINATIONS, 1961—SOUTH AUSTRALIA

Categories	Number Examined	New Active T.B. X-rayed Current Year	Active Rate per 1,000 Examined	Active T.B. from Previous Years
Uranium workers	150	—	—	—
Migrants	3,973	—	—	1
Referred by private doctors	2,252	3	1·3	2
Commonwealth public servants	1,288	—	—	—
State public servants	506	—	—	—
Industrial groups	165	—	—	—
Volunteers	4,038	4	1·0	1
Teachers training college	3,231	—	—	—
University students	850	—	—	—
Mantoux positive children and contacts	697	1	1·4	—
Failed to be investigated by own doctor—re-X-rayed	35	—	—	—
Inactive previous surveys—re-X-rayed.....	1,130	4	3·5	4
	18,315	12	—	4

A total of 4,619 persons from mass surveys were examined at the City Unit. These are included in Table 32. Three cases of new active pulmonary tuberculosis were discovered.

TABLE 36.—TUBERCULIN TESTING AND B.C.G. VACCINATION IN SCHOOLS, 1961—SOUTH AUSTRALIA

Group	Number Tested	Positive from Previous B.C.G.	Naturally Positive	Percentage Naturally Positive	Negative	Number Vaccinated
				Per Cent		
Metropolitan—						
Grade VII (12 years)—						
Australian born	6,332	99	130	2·1	6,103	6,091
Migrants	1,419	99	92	7·0	1,228	1,214
Sub-total	7,751	198	222	3·0	7,331	7,305
Metropolitan—						
Grade I (5 years)—						
Australian born	5,409	26	33	0·6	5,350	—
Migrants	654	13	9	1·4	632	—
Sub-total	6,063	39	42	0·7	5,982	—
Grand total	13,814					7,305

TABLE 37.—TUBERCULOSIS SERVICES—CHEST CLINIC
MANTOUX TESTING AND B.C.G. VACCINATIONS—1ST JULY, 1961 TO 31ST DECEMBER, 1961

Age Group (Years)	*Number of Persons Tested	Naturally Positive	Percentage Naturally Positive	Positive from Previous B.C.G.	Negative	Vaccinated	
						Contacts	Others
0-4	472	14	6·0	236	222	161	13
5-9	265	7	5·0	125	133	66	9
10-14	192	17	21·3	112	63	33	4
15-19	891	57	16·1	537	297	21	184
20-24	364	39	25·0	208	117	13	50
25-29	193	62	46·9	61	70	21	14
30-34	154	59	50·0	36	59	16	8
35-39	144	67	54·0	20	57	12	6
40-44	97	47	58·7	17	33	5	1
45-49	90	45	59·2	14	31	5	—
50-54	55	26	53·1	6	23	3	—
55-59	40	25	65·8	2	13	2	—
60-64	35	21	60·0	—	14	—	—
65-69	26	19	73·1	—	7	—	—
70-74	17	11	64·7	—	6	—	—
75 and over	18	6	33·3	—	12	—	—
	3,053	522	—	1,374	1,157	358	289

* These are persons attending the Chest Clinic, either because of chest symptoms, or as contacts of persons with tuberculosis, or for examination in association with employment involving tuberculosis contact, such as nursing.

TABLE 38.—TUBERCULOSIS SERVICES—CHEST CLINIC
RETESTING OF B.C.G. FOR PERIOD 1ST JULY, 1961 TO 31ST DECEMBER, 1961

	Retested	Positive Converted by B.C.G.	Percentage Positive	Negative Retested after B.C.G.	Percentage Negative
1st retest—2 months	577	553	95·8	24	4·2
2nd retest—12 months	174	168	96·6	6	3·4
3rd retest—2 years	153	143	93·5	10	6·5
4th retest—3 years	113	107	94·7	6	5·3
5th retest—4 years	110	104	94·5	6	5·5
6th retest—5 years	99	86	86·9	13	13·1
7th retest—6 years	63	59	93·7	4	6·3
8th retest—7 years	163	153	93·9	10	6·1
Totals	1,452	1,373		79	

TABLE 39.—TUBERCULOSIS SERVICES—CHEST CLINIC
ATTENDANCES FOR 1ST JULY, 1961 TO 31ST DECEMBER, 1961

	Direct Referral by Private Doctor	Referral Resulting from Mass X-ray Film	Contact of Known Case	Routine Examination of Police Recruits, R.A.H. Nurses, Etc.	Total
First visit to Chest Clinic ever	220	162	730	1,020	2,132
Previously attended Chest Clinic but first time in current year					5,193
Subsequent attendance in current year					9,533
			Adults	Children 16 Years and Under	16,858
Total attendance, 1st July, 1961 to 31st December, 1961			13,037	3,821	

6. SUMMARY AND CONCLUSIONS

The problems of distance in Australia need no emphasis. One way of overcoming many of these problems is by decentralization of staff and activities.

The establishment of a District Inspector based at Whyalla is the Department's first move in this direction. It is already clear that the move is a valuable and successful one. Environmental problems increase with increasing population. The report indicates how many of these problems are being met.

Reports of infectious and notifiable diseases in 1961 in the main showed a further development of trends commented on in 1960. There was no report of epidemic influenza. Poliomyelitis notifications increased, but again without involving anyone who had been fully immunized. Tuberculosis notifications showed a substantial decline in place of the small rise recorded in 1960.

Hepatitis was again more prevalent, and rubella less so.

The work of the School Health Branch is notable for the increasing activity of the Deafness Guidance Clinic and the tremendous increase in medical examinations of teachers and teaching scholars. The report contains a critical review of the work of the Dental Section. This is aimed at achieving more advantageous use of limited facilities.

The report of the Poliomyelitis Branch contains a full review of the whole vaccination campaign against this disease. It is a record of achievement of lasting value. The effectiveness of the campaign and of Salk vaccine produced by the Commonwealth Serum Laboratories are strikingly demonstrated.

A further decrease in the tuberculin reactor rate of young children is now accompanied by a substantial decrease in incidence of tuberculosis as revealed by new notifications, and prevalence of the disease as shown by decreased numbers receiving tuberculosis allowance, and this despite accelerated case-finding work.

In all we are able to report a year of substantial achievement in many fields, and the breaking of new ground in a number of directions.

The Board again expresses its thanks to members and officers of Local Boards of Health for loyal and often enthusiastic co-operation in our joint efforts to ensure healthy living throughout South Australia.

The Board is keenly appreciative of the work of its own officers and the staff of the Department of Public Health.

We also express to you, Sir, our grateful thanks for help and support and for your continued interest in the work of the Board and the Department.

P. S. WOODRUFF, Chairman.
G. H. McQUEEN
J. B. CLELAND
C. WILLIAMSON
A. BERTRAM COX

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Members.

M. E. S. BRAY, Secretary.
Adelaide, 7th August, 1962.

